Internationalization at home

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Internationalization at home: Technology-supported multicultural learning in Peru

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"For the things we have to learn before we can do them,

We learn by doing them."

Aristotle[1]

[1] The Nicomachean Ethics, 350 B.C

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List of frequently used acronyms

IC –	Intercultural Competence
ICT –	Information Communication Technology
CHEX –	Channel Expansion
MRT –	Media Richness Theory
MST –	Media Synchronicity Theory
SPT –	Social Presence Theory
TAM –	Technology Acceptance Model
VC –	Video Conference

PREFACE

It was in 1997, when working in a Peruvian university as an educational administrator, that I had my first experience of distance education using information communication technologies (ICT). At that time, one of my responsibilities was to coordinate the logistics of a course delivered by compressed video technology, called videoconference, offered by the Center for Advance Educational Services (CAES) at MIT in the USA.

Peruvian students who were enrolled on an MBA program were receiving credit-bearing lectures one day per week from an instructor at MIT and on other days they shared discussions with students who were located in Chile. Synchronous technology permitted real-time interactivity through audio, voice, video and data. To me, the benefits for students that came from this high academic level and intercultural activity seemed amazing.

Since that first experience, almost 20 years have passed and videoconference technology has experienced some fundamental changes. The most significant change is that of accessibility; those students in 1997 were part of an elite group, not just because of the prestige of the institution from which they received the lectures, but because of the high cost of the standard definition VC equipment and ISDN (Integrated Services for Digital Network) telephone connectivity line that are required to transmit audio and video in real time.

ISDN is now no longer required for transmitting audio, video, voice and data synchronously. Thanks to technological advances in internet connectivity, videoconference connection is available in corporations and in almost all universities worldwide. Affordable internet connection has also served to create several ways to connect people and has become part of daily life. But an available connection to technology by itself is not enough to impact positively upon a group or organization; people (and particularly us, as educators) should be

socially responsible and look at how the use of technology can be converted and maximized for the benefit of society.

Currently, and thanks to the support and vision of leading and founding authorities, the benefits of ICT connectivity at Universidad ESAN have expanded and the education of more and more students has been improved. [2]

ESAN University has promoted and invested in infrastructure, technology facilities and in the expansion of the international partnerships and provides important resources for research. As such it was possible for me to introduce the link class as a method of teaching through this ICT that has been incorporated into the university's internationalization strategy. ESAN undergraduate students benefit academically and, I would say, personally from the facilities provided by ICT to allow academic work in an international environment. The academic endeavor presented in this dissertation provides inclusive opportunities to more students than the traditional internationalization strategies that are based on a student's mobility. This method also allows educational managers to better understand the use of ICT in internationalization.

[2] Universidad ESAN is a leading academic institution that was founded in 1963 as a Graduate Business School; its implementation was entrusted to the Graduate School of Business of Stanford University in the USA. It transformed into Universidad ESAN in 2003 and launched the bachelor programs in 2008. It is a private, nonprofit university that offers master's degrees, executive programs at graduate level as well as other academic and professional services. Nine bachelor programs that hold AACSB accreditation are offered in the School of Law and Social Sciences, the School of Engineering, and the School of Economics and Management.

ABSTRACT

The title of this thesis, "Internationalization at home: Technology-supported multicultural learning in Peru", summarizes what a Peruvian university is doing as part of its strategy for internationalization and for training students to acquire intercultural competence using technology. The significance of intercultural competence relies on understanding other cultures and people's behaviors patterns through a knowledge of other cultures; has become a k-competence required by new graduates in order to succeed in the current globalized labor environment.

The limitations of the traditional internationalization component, which is based on student's mobility, can be seen almost globally through the limited number of students taking part in these programs due to the high costs of travelling and living abroad.

This research contributes to the disciplines of Information Systems, management science in particular the field of management education and to cross cultural studies. It proposes a model that provides understanding of technology-supported multicultural learning in Peru and the outcome of intercultural competence when intervening variables of information communication technologies and the methods of training are applied by faculty experts. The central research question in this dissertation is: How does a multicultural experiential learning that is technology-mediated through the use of ICT become a potential resource for student's intercultural competence acquisition?

Three studies have been carried out in order to understand this phenomenon. In the first study, 24 faculty experts of 14 different nationalities who work in different countries across 4 continents were interviewed. For the second study, 199 students of 12 nationalities were surveyed as they participated in a collaborative class using communication technologies between 2012 and 2014. At the level of management, 299 alumni of postgraduate programs

from the Peruvian University have been surveyed to test their vision on technology and training in IC. The analysis was conducted by applying qualitative and quantitative methods. The results revealed a faculty insight of intercultural competence and for training using ICT. In the analysis of students, videoconference was found to have a medium level capability and appropriateness as a means to teach IC. In addition, we discovered that cross-cultural differences have an impact upon the appreciation of media capability. The findings amongst managers show a positive vision of technology and the importance to be trained in IC skills. These findings mean that teaching IC through information communication technologies is a feasible means of achieving internationalization at home in higher education institutions.

CHAPTER 1: INTRODUCTION

1.1 Higher Education and the Trends in Internationalization and Globalization: The High Cost of International Mobility and the High Expectations to Acquire Intercultural Competence

The forces of globalization affect all worldwide job sectors. Higher education is not an exception; "[t]he international dimension of higher education responds to the challenges of globalization" (De Wit, Jaramillo, Gacel-Ávila, & Knight, 2005, p. xi). The term *higher education* (The World Bank, n.d), is used in the literature to refer to the optional third level or final stage of formal learning, including but not limited to university education; other terms used are *post-secondary education*, *third level of education* and *tertiary education*.

International refers to the actions and activities between multiple countries; the etymology of the noun corresponds to *inter* and *national* and was coined by the British philosopher and economist Jeremy Bentham (1748-32). One of Bentham's best-known arguments was in favor of the general availability of education and that the best moral action for the state was an action which maximizes utility.

Internationalization and globalization are two separate phenomena. According to De Wit, Jaramillo, Gacel-Ávila, & Knight (2005) the term *internationalization* has different assumptions. It refers to international activities such as academic mobility for students and teachers. But it also refers to the development and delivery of joint projects, programs and research initiatives, either at home or in host partner's country, including the use of a variety of face-to-face and distance techniques.

The term *globalization* can be explained from five different perspectives (Carano, 2010): globalization in terms of internationalization, as the predominance of international exchange;

in terms of liberalization, as the removal of government restrictions placed on free movement; in terms of universalization, as the process of spreading objects and experiences; in terms of westernization, as the adoption of a capitalist structure; and lastly globalization in terms of supraterritoriality, as the reconfiguration of social spaces not restricted to territorial distances or borders.

Building upon the ways in which globalization is currently understood, we propose a further understanding of globalization in terms of *intersocialization*. This explanation considers how inner aspects of the human being—people's values and ideas—can be influenced by both national and organizational culture as well as by encounters between intercultural groups.

According to Knight and De Wit (1996), globalization is also defined as the "flow of technology, economy knowledge, people, values and idea across borders. Globalization affects each country in a different way due to each nation's individual history, traditions, culture and priorities" (Knight, 2008, p. 4).

Globalization in higher education is expressed through competition at an international level which can be measured by the high standards of international accreditation bodies.[3] According to the AACSB International Globalization of Management Education Task Force (2011), "globalization is a process of change" (p. 7) and this is expressed within educational institutions:

> Successful globalization of management education results in greater competence and confidence among graduates who hope to do business with global impact; it provides

[3] Notable accreditation bodies include: the Association to Advance Collegiate Schools of Business (AACSB); European Quality Improvement System (EQUIS), EFMD Program Accreditation System (EPAS); and the Association of Masters of Business Administration (AMBA).

> more research insides into the global complexity of the managers, enterprises, and markets; and it ultimately facilitates better service of the global business profession. (AACSB International Globalization of Management Education Task Force, 2011, p. 203)

Globalization is expressed in an institution's mission statement where four categories usually refer to globalization in universities: the global nature of business, global market for talent, global higher education landscape and the need for intercultural awareness. Each one identifies specific topics according to the category. In order to fulfill their mission statement, institutions must consider adopting the appropriate strategies through educational management operations (See Appendix A).

However, there is an important interconnectedness between internationalization and globalization. With this in mind, several organizations concerned with the internationalization of higher education have been working to promote the internationalization of institutions through their research.

These organizations—the European Commission's Directorate General for Education and culture (DG EAC), the British Council, NAFSA, the Association of International Educators in the United States, EAIE, the European Association for International Education and IAU, the International Association of Universities—developed the IAU global survey on internationalization of higher education in 2014 (Egron-Polak & Hudson, 2014). This survey provides data and analysis of the potential benefits and current trends in the internationalization of higher education for both institutions and society alike. The results of this survey show that the most important international driver of the institution is the head of the organization, followed in second place by the International Affairs Office and, in third place, the faculty members of the organization.

In 2014 this IAU global survey obtained responses from 1,336 higher education institutions (most of which are public), based in 131 countries in every region of the world. These universities have less than 5,000 students each. Interestingly, the results have shown at an aggregate level that institutions have clear priorities with respect to international enrollment, outbound student mobility and partnership. Students' knowledge and appreciation of international issues was shown to be the most important benefit and is expressed through intercultural competence.

Statistics regarding full-time study abroad, reported by the OECD (2015), confirm that in 2013 4.5 million students were enrolled in tertiary education outside their country of citizenship. Figure 1 shows that the United States, United Kingdom, and Australia have the largest proportion of international students as a percentage of their total tertiary enrolments. Member countries of the OECD attract 73% of all students enrolled abroad in countries which have reported data to the OECD or the UNESCO Institute for Statistics.

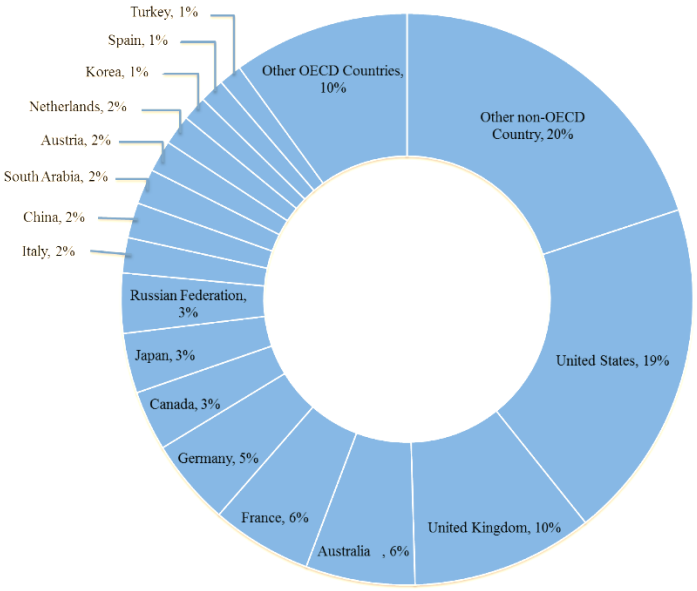

Figure 1. Distribution of foreign and international students in tertiary education, by country of destination (2013)

(Total students = 4.5 million).

Source: OECD. Table C4.4, and Table C4.6, available online. See Annex 3 for notes (www.oecd.org/education/education-at-a-glance- 19991487.htm).

According to the OECD report, the biggest group of international students enrolled in tertiary education originate from Asia (53%), followed by Europe (25%), Africa (8%), Latin America and the Caribbean (5%), North America (3%) and Oceania (1%).

With regard to the principles in institutional internationalization policies, emphasis is placed upon academic goals. There is a consensus amongst institutions regarding the concern about limited public funding to support internationalization and the lack of equal access to international opportunities available to students. After these concerns, linguistic barriers are ranked second and, in third place, visa restrictions that might be imposed upon students (Egron-Polak & Hudson, 2014). According to De Wit et al. (2005):

> An estimated 1.5 million young students worldwide currently study abroad. Roughly half of them come from countries in the Organization for Economic Co-operation and

> Development (OECD), and more than 40 percent from East and South Asia. Only a few students from Africa, the Middle East, and Latin America get the opportunity to mix with their peers in other countries. (p. xi)

Here, a research problem can be identified: student mobility is largely restricted by limited financial resources which in turn limits the ability to acquire intercultural competence. What other solutions, then, can be found to substitute mobility in order to acquire intercultural competence?

The current scenario for graduates, mainly in management science, is the same in almost every part of the world: they are faced with huge competition. Critical factors required by recruiters, together with technical knowledge, mean graduates must possess a wide set of competences in order to succeed in globalized markets (Laughton & Ottewill, 2000). Candidates in the job market are required to demonstrate critical thinking and an awareness of how different behaviors and cultural values affect work and management styles.

The acquisition of intercultural competence (IC) has been traditionally promoted by institutions through international mobility, providing students with opportunities to participate in an academic exchange where students live and study in a foreign country. According to Gröshke and Bolten (2012), "intercultural competence results from experience abroad" (p. 47). In this way, students directly experience the main differences between their "own culture or home culture" and the "not own-culture or host culture". This awareness of cultural differences will be acquired by individuals through cognitive and affective processes and can be observed through the occurring differences primarily in language, communication, symbols and behavior. As time passes, individuals discover other differences defined by cultural values in more depth. Moving away from the social aspect, another challenge for students lies within the

academic sphere, namely, they must deal with the necessary adaptation to a different educational methodology of the host institution.

These study-abroad programs are usually optional as part of an academic curriculum (in only a few cases are they a mandatory requirement). To graduate from a business school in some countries, as in Europe, a semester or a year spent abroad is required. For example, at master's level in CEMS—the Global Alliance in Management Education program among institutions in Europe, Asia, Australasia, North and South America—cross-cultural knowledge and awareness are imparted most notably via the semester(s) that each CEMS student must complete abroad in another member school.

Agencies and governments have established educational programs that provide funds to increase mobility. The impact in terms of numbers of students who have benefited is varied. the Erasmus Program (European Community Action Scheme for the Mobility of University Students) is well-known both in Europe and outside the region (Jacobone & Moro, 2013). Educational programs to increase mobility in other regions include the Program for North American Mobility in Higher Education, University Mobility in Asia and the Pacific (UMAP), EMMA: Erasmus Mundus Mobility with Asia, the ASEAN International Mobility for Students (AIMS) and the Platform for Student and Academic Mobility of the Pacific Alliance. According to the U.S. Department of Education, the Program for North American Mobility in Higher Education fosters student exchange within the context of multilateral curricular development and study abroad. The program is a grant opportunity and is administered collectively by the U.S. Department of Education, Human Resources and Skills Development Canada (HRSDC) and in Mexico by the Secretariat of Public Education (Dirección de Desarollo Universitario, Secretaría de Educación Pública - SEP).

Established in 1993, University Mobility in Asia and the Pacific (UMAP) is a regional voluntary association of governmental, non-governmental and/or university representatives dedicated to promoting student and staff exchange and expertise through mobility.

The Erasmus Mundus Mobility with Asia (EMMA) funds exchange programs between Asia and Europe, enabling individual mobility of academics from partner countries. This program is sponsored by the Erasmus Mundus program of the European Commission and is built on a partnership of seventeen universities: ten in Asia and seven in Europe.

Another student mobility program is the ASEAN International Mobility for Students (AIMS) program, for citizens of Malaysia, Indonesia and Thailand.

Since 2013, the Platform for Student and Academic Mobility of the Pacific Alliance has been contributing to the professional training of advanced human capital of its member countries: Chile, Colombia, Mexico and Peru. Annually, each country offers a total of 100 scholarships to the other countries, 75 for undergraduate exchanges and 25 for doctorates (an exchange for faculty and researchers). The final number of a granted scholarship depends on the demand for studying in each destination and if the candidates are able to fulfill the requirements of the corresponding institution. However, results in recent years, 2013 and 2014, show a total of 645 scholarships granted. The percentage of scholarships given in each country care as follows: Chile (28.8%), Mexico (27.3%), Colombia (22.8%) and Peru (21.1%). (See Appendix B).

It is important to reflect on the fact that, although existing scholarship programs aim to facilitate mobility and expose students to different cultural environments, the percentage of students that benefit from such programs is still limited.

In the latest EUROSTUDENT report, Macready and Tucker show the results of a survey group of immobile students in 20 European countries and found five reasons for not studying abroad: "financial insecurities (57%), insufficient support of mobility in the home country (49%), lack of individual motivation (48%), insufficient support of mobility in the host country (24%) and lack of language competency (23%)" (Macready & Tucker, 2011, p. 44).

Although the reasons for not studying abroad have been identified in European countries, the available research and data on this topic is limited in Latin America. However, similar results could be found in the region primarily due to the limited integration of countries and the absence of homologation of academic programs as well as the cost (which is particularly high and requires extra funding).

This leads us to ask the following questions: Would it be feasible to propose mechanisms *other* than travelling to expose students to interaction with the members of different cultures? How might the use of modern technologies, such as Information and Communication Technologies, enable intercultural exchange and interaction?

We are interested in studying the challenge faced by institutions in achieving a student's "need for intercultural awareness" and discovering how to train global leaders, that is, competitive professionals with global vision.

Based on this argument to explain the influence of globalization in international business and the impact of human interaction worldwide, we will pay attention to the need to understand the importance of this discipline for graduates in management sciences. For that reason, this dissertation focuses on explaining the need to look for alternatives when training students in the discipline of cross cultural management. Furthermore, it is important to mention that the World Bank Group's Doing Business 2016 report places Peru at 50th position in the world in terms of the ease of doing business, and third best in Latin America. Considering Peru's natural

resources and the opportunities for foreign capital investment in several sectors, it is expected that the job environment for Peruvians will demand managers with cross cultural management competences who can efficiently work with diverse cultural teams in such a new business environment.

1.2 Information Communication Technologies (ICT) in Education: Literature, Trends and Role in Higher Education

Bhaumik (2012) defined ICT "as an umbrella term that includes any single information or communication technology, a combination of many of them or any other technology based on the convergence of these" (p. 245). His study stated that, in terms of ICT use in the classroom, teaching methods can be supported by several available digital resources on the internet including websites, simulation softwares, and PowerPoint presentation slides.

Based on the empirical work of Benbunan-Fich (2002), Bhaumik (2012) categorized the applications of ICT in educational settings in three dimensions: pedagogy, place and time. The pedagogy can be either objectivist or constructivist; for place the possibilities are either a proximate location or a dispersed location. A proximate location refers to when the application of the technology is in the same place, and a dispersed location is when it is in a different place. In terms of time, a synchronous mode refers to when it takes place at the same time and an asynchronous mode when it takes place at a different time.

ICT is a result of new technologies where groups have changed from traditional and isolated ways of working. New forms of interaction and group collaboration are now made possible in e-teams though the internet, videoconferencing, group support systems (GSS) and distance education tools (e.g. Blackboard and email) (Rutkowski, Vogel, Bemelmans, & van Genuchten, 2002).

According to Kumar (2008), ICT:

> [i]s an umbrella term and includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. (p. 556)

Nowadays, the use of information and communication technologies through different devices and social media has facilitated not just communication, but also the transferring, sharing and creation of knowledge. This phenomenon is also influenced by globalization.

Other ICT such as social media (e.g. Facebook) has emerged, not just for communication and socializing, but also for learning purposes, as it is the preferred tool for young students interacting with their e-team members.

In Kumar's (2008) view, ICT education includes electronic learning or e-learning (also known as online learning) which uses networked and/or multimedia technologies; blended learning, where different delivery methods are combined together; and distance learning.

Blended learning methods include a mixture of face-to-face learning (traditional classroom); self-paced learning or learning according learners' own time and pace; and online collaborative learning that involves synchronous interaction (at the same time) and/or asynchronous interaction (at different times).

The concept of communication technology in education is also referred to as distance education. Isaac Pitman is regarded as the first modern distance educator. He began teaching by correspondence in 1840 from Bath in the United Kingdom (Williams, Nicholas, & Gunter, 2005). The University of London founded its correspondence college in the late 1880s and in 1910 Correspondence Schools were created in USA (Williams et al., 2005). Technology was

introduced later and the "State University of Iowa began experimenting with transmitting instructional courses as early as 1932, seven years before television was introduced at the New York World's Fair" (Williams et al., 2005, p. 111).

The University of Wisconsin "created the Articulated Instructional Media project (AIM), which attempted to be a complete system of distance education, including broadcast media, correspondence and telephone" (Williams et al., 2005, p. 112). In the UK, the Labour Government also looked to television to provide distance learning and approved the establishment of the so called "University of the Air", renamed the Open University (OU), a public university founded in 1969 that is based in Milton Keynes. With over 900,000 students, the Open University has become the UK's largest university.

In the mid-1970s, satellites began to be used for television broadcasting and the idea of teleconferences began to emerge (Moore & Kearsley, 1996; Williams et al., 2005). Teleconferencing is defined according the Merriam-Webster dictionionary as " the holding of a conference among people remote from one another by means of telecommunication devices".

For Rumble (1986), distance education is defined as "education imparted where the learner is physically separated from the teacher as a planned and guided learning experience" (Holmberg, 1989 p. 111). It consists of a two-way structure, different from traditional classroom instruction (Keegan, 1988). Yet we argue that distance education is not limited to this definition as it can also be extended to a planned and guided learning experience, where a collaborative and cooperative method is established between two or more teachers through their joint classroom in different geographical locations. The classroom environment can be face-to-face mediated by the use of ICT in real time which is a "local and bi-directional" learning process where each teacher is simultaneously physically present and separated from

their students. In this thesis we will further explain this process of learning within a classroom environment.

One question to address is that of if universities properly exploit the benefits of ICT for their students. Most of the current research on management education and ICT focuses on preparing online courses, video lectures and online syllabus. Intensive use of ICT in higher education, referred to as technology-mediated learning (TML), is limited (Bhaumik, 2012). This is despite the positive results and recommendations arising out of recent studies groups such as the New Media Consortium (Johnson, et al., 2013a).

However, not much attention has been given to the interaction between students from diverse cultural backgrounds using ICT. Nor has attention been paid to the efficiency of using synchronous technologies such as videoconference to learn about each other's cultures in an educational context.

The academic literature has primarily focused on understanding the process of developing virtual teams, class curricula and online assessment methods (see Ubell (2011) for a detailed overview).

The emergence of new ICT appears to be a sustainable resource that can provide equal opportunities for education access to the "rich and poor". Yet, certainly, restrictions still exist when covering the entire population of students and the impact of these restrictions on training specific skills should be studied in depth.

The ways that these virtual encounters affect training in cultural competence have not yet been reported (Bargiela-Chiappini & Nickerson, 2003). As such, we will focus on the access to educational resources and the acquisition of the skills needed to interact effectively. In doing

so, we highlight the importance of analyzing the role of educational management in influencing methods of teaching and learning related to the utilization of ICT in education.

According to a report by the European Commission (2013), new technologies and open educational resources (OER) can have an extraordinary effect on improving the efficiency, accessibility and equity of education, training and learning. This expresses how educational programs based on the use of ICT facilitate connectivity; allow access to and equity of education; and provide opportunities for educational managers and academics to develop a campus-based internationalization strategy, when study abroad is not a viable option for all students.

Recently, other technology, such as social media, has emerged as a way to communicate for learning purposes as it is used as a tool for individuals in e-teams to interact. See Appendix C for a list of educational programs using ICT in selected universities.

However, according to an IAU global survey by Egron-Polak and Hudson (2014), the use of information and communication technologies (ICT) in higher education is "still limited" (p.6). Of the total 1,336 respondents from 131 countries, half of the respondents confirmed that they were offered distance, online or e-learning courses. In terms of geographical location, Asia and the Pacific (followed by Europe) are the regions where the majority of international students are enrolled in distance, online and e-learning courses using ICT.

1.3 Current Development in Technologies Supporting Higher Education

New Media Consortium (Johnson et al., 2013a) reported their research of emerging technology in education in the NMC Horizon Project, which is truly global in scope. Several significant trends have been identified through this research. First, it was established that the

world of work is increasingly global and collaborative; more and more businesses and companies operate in the global market place. These companies consist of teams that are located in not only different geographical locations and time zones, but also across significant cultural differences. This increasing trend is driving changes in the ways that student projects are structured. To facilitate more teamwork and group communications, projects rely on tools like wikis, Google Doc, Skype and online forums. Evaluation is based on the success of the group dynamic; in many cases the online collaboration tool in itself is a critical outcome as it stores the process.

Secondly, education paradigms are shifting (including online learning, hybrid learning, and collaborative models)**.** Institutions are embracing face-to-face/online hybrid learning models that have the potential to leverage online skills, New Media Consortium (Johnson, et al., 2013a). Online learning environments can offer different affordances than physical campuses and opportunities for increased collaboration. But how efficient are they? Theoretical research has demonstrated their efficiency in providing support.

Thirdly, the adaptability to work, learn and study wherever people want to through their own devices (computers, tablets, smartphones and e-readers), social media and networks provides opportunities for informal learning, that can be used according to students' preferences or learning style (Johnson et al., 2013a).

In addition, social media is changing the way people interact, present ideas and information, and also judge the quality of the content and contributions. Interestingly, social media is a routine part of many people's daily lives, helping students to share news about scientific and other developments.

Furthermore, Massive Open Online Courses (MOOCs) are being widely explored as alternatives and supplements to traditional university courses. MOOCs led by MIT and

Stanford have attracted attention as educational innovations and are seen as alternatives to credit-based instructions. Although the achievement of thousands of enrollments has opened the interest of institutional leadership, the benefits of using MOOCs in emerging countries are unclear.

The sixth trend observed is that we are ever more challenged to revisit our roles as educators through mentoring and preparing students for the competitive professional world in which they will live and work. These challenges are faced by every university considering the abundance of resources available via the internet.

A collaborative effort between the New Media Consortium (NMC), the Centro Superior para la Enseñanza Virtual (CSEV), and Virtual Educa made by Johnson et al. (2013b) recently published "The Technology Outlook for Latin American Higher Education 2013-2018". This qualitative study presents a set of significant challenges in identifying the emerging technologies that have a strong likelihood of adoption in Latin American higher education. First, there is a need for the creation of more flexible learning models. Twenty-first century learners require rmore blended models which include online, face-to-face and ICT-mediated learning that support resource sharing and social networking. New learners demand an education where they can learn by doing or experimenting in parallel with local classes and lectures (M. Thomas & H. Thomas, 2012).

Secondly, a change in attitude is needed among academics; most do not use new technologies for learning, teaching and participating in professional development opportunities, whether within research or collaborative teaching. Among the reasons for this are a lack of expectations and an apprehension or fear that the tools themselves have become more of a focus than learning. Do university faculties fully understand the possibilities offered by social media and technologies? (Thomas & Thomas, 2012).

With regard to how cultural influences affect the use of technology and the usage rates of the internet and PCs, the study of Gong, Zhan and Stump (2007) argued that in societies that ranked high on the Hofstede dimension of power distance, such as Latin American countries, "people may take less initiative to consider and discuss the introduction of new products and technologies, and will generally wait for signals from authority figures or opinion leaders" (p. 61). But we propose other influential aspects. The lack of infrastructure, resources and training; limited access to technological and academic resources; English language limitations; expectations of financial rewards; and a high level of uncertainty avoidance in these societies all inhibit individuals from using new technologies.

Another challenge is that education professionals must improve the training that is available on the educational use of ICT. There is currently no integration of ICT training in the Latin America higher education curriculum which is probably due to an overall lack of professional development for faculties. The curriculum should include "the use of social media in business"; students talk a different language (tweets, retweets, cloud, crowdsourcing, etc.), have different expectations and are "virally vocal", i.e. word spreads fast through ICT and social media Thomas & Thomas, 2012). Because of this different language and different set of expectations, there is a need to create new programs and a collaboration between universities.

Fourth, as Johnson et al. (2013a) mentioned, "faculty training still does not acknowledge the fact that digital media literacy continues its rise in importance as a key skill in every discipline and profession" (p. 9). This challenge can be explained by the fact that digital literacy remains more theoretical than experimental. Abilities and standards centered on tools and platforms have been shown to be transitory. (Johnson et al., 2013a)

However, the study of St. Amant (2007) reported that interest in online instruction in technical communication has increased and is becoming available in non-western countries. There is a trend towards deregulation in global education; external-overseas providers of

educational services can operate without regulation in the Czech Republic, Indonesia, Mexico, Nigeria, and Russia and with only few restrictions in Argentina, Bahrain, Estonia and Latvia. At the same time, the study states that "although online degrees were once viewed with some skepticism and still are by certain groups, many of today's employers—especially multinational corporations—acknowledge the validity of such degrees" (St. Amant, 2007, p. 16).

Fifth, higher education institutions might prioritize reinforcing infrastructure over improving and providing free internet coverage to public spaces or offering free or low-cost equipment for teaching and learning. Even though students look to IT facilities to provide mobility and develop their learning and working activities, higher education institutions in Latin America are still not sufficiently equipped with mobile broadband and wireless access.

According to a report by CAF Banco de Desarrollo de América Latina (2014), Latin America and the Caribbean are in the medium level of internet utilization. At the end of 2012 there were 265 million internet users, equivalent to a level of 44.7% wideband coverage. Internet efficiency refers to a low cost, high quality and availability for transmitting information. The possibilities for internet growth depend on the function of interconnections which is why Latin American governments are involved in plans to increase wideband coverage. The average internet connection services monthly fees for fixed wideband access is high in most Latin American countries compared with European countries as such as Spain (a monthly cost of US$ 4.53) and France (US$ 2.07). Some examples of these fees in Latin American countries are as follows: in Argentina US$ 23.99, Brazil US$ 14.75, Colombia US$ 20.77, Ecuador US$ 20.16, Mexico US$ 14.58 and Peru US$19.88.

Sixth, it should be taken into account that students' styles of thinking and learning drive the transformation of Latin America Higher Education. As such, there is a need for blended

and ICT-mediated learning opportunities in lecture theatres through the implementation of new pedagogies and technologies.

Seventh, education systems should promote the foundation of socio-cultural learning communities across Latin America, both for students and faculty to improve awareness of civic culture. This will equip educators and students with the skills to solve national and global issues.

The eight challenge mentioned by Johnson et al. (2013a) is that "too often it is education's own processes and practices that limit broader uptake of new technologies. Much resistance to change simply reflects comfort with the status quo" (p. 10). Experimentation or innovative applications of technologies are frequently seen as external roles for a professor or school leader rather than an integrated part of the faculty. In order for this to change, significant changes in attitude and policy are needed (Johnson et al., 2013a).

1.4 Placing Boundaries: Internationalization in Higher Education and Educational Management Definitions

1.4.1. Internationalization in higher education

The term *internationalization* in higher education has evolved over the last forty years from the most common—of international cooperation, international relations and international education—to new generic terms and specific elements. According to Knight (2004), there will never be a universal definition. Generic terms associated with internationalization in the last fifteen years are: globalization, borderless education, cross border education, transnational education, virtual education, internationalization "abroad", and internationalization "at home". Specific elements of internationalization in education have the following specific elements:

education providers, corporate universities, liberalization of educational services, networks, virtual universities, branch campus.

Internationalization in higher education is defined "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of higher education" (Knight, 2004, p. 6). According to Middlehurst (2008), internationalization may require different institutional structures and governance arrangements, as organized by individual academics or academic departments, while others require organization, management and resources.

In this context of internationalization in higher education, Müller-Pelzer (2009) stated that European universities should address the issue of training and equipping their future graduates with the subject knowledge, competence and skills required to operate effectively in international roles. A highly mobile and internationally expert workforce is essential for export-based economies. However, Müller-Pelzer (2009) argued that the problems of standardization and reduction of internationalization in higher education are affecting European institutions. Standardization refers to the basis of business principles and protection of market share in global education when obtaining the maximum outcomes through the minimum use of resources (e.g. a shorter first degree after 6 semesters, the ever increasing use of English, a common linguistic denominator for economic and academic exchange, an explicit focus on training in soft skills). But standardization has implications which, Müller-Pelzer (2009) paradoxically argued, will impact negatively on students' achievement of intercultural competence.

How does this occur? Firstly, the reduction to only three years of study for a university degree has not increased students' international mobility. Secondly, although the English language has proven advantages in the procedures of many business functions, there are still

business where other competences are needed, such as HRM, creation of joint ventures, mergers, international teams and negotiations. Thirdly, intercultural competence cannot be taught, rather it requires first-hand experience.

For Latin America, internationalization of higher education will provide new opportunities to attract talented students as well as learning from best practices and the opportunity to establish networking for collaboration and research. Although the region is not moving fast enough (Holm-Nielsen, Thorn, Brunner, & Balan, 2005), we think that the real challenge lies in looking for creative, innovative and sustainable approaches that manage even with limited or scarce resources. Furthermore, the responsibility to promote internationalization lies with educational managers and faculties.

1.4.2. Internationalization at home or campus-based

Knight (2008) stated that the idea of "internationalization at home" (p. 13) has been developed as a result of a superior focus on international mobility and its limitations. Internationalization at home gives greater prominence to many campus-based elements such as: intercultural and international dimensions in teaching and learning, cultural diversity of the classroom, research projects, intercultural case studies, role playing, reference materials, extra-curricular activities, active involvement and assimilation of foreign students and scholars into campus life, virtual student mobility for joint courses and use of international scholars and intercultural experts (Knight, 2008).

Blasco (2009) pointed out that the internationalization of business necessarily involves a cultural dimension and emphasized that teaching interculturalism in business schools is not a simple task. Yet, while many studies have addressed various dimensions of the internationalization of business curricula, the students' perspective has been hardly explored.

When international and internationalization concepts are referred to, the term *culture* immediately arises. The concept of culture, by definition a complex one, has been broadly studied in the social sciences (philosophy, sociology, anthropology, psychology) and was later incorporated into other disciplines such as management sciences, organizational theory and information systems. Smircich (1983) provided an examination of the concept of culture for the study of organizations and points out that there is an intersection of culture theory and organization theory in five themes: "comparative management, corporate culture, organizational cognition, organizational symbolism, and unconscious processes and organization" (p. 341). In this dissertation we use *culture* to refer to the different patterns and behavior of members that belong to a group with a shared national culture for comparative purposes.

1.4.3. Educational management

Educational management is a field of study and practice concerned with the operation of educational organizations and the aims of education (Bush, 2006). School aims are deeply influenced by the external environment, the pressures of government policies, national curricula, and globalization. The theory of this field of study provides us with a framework to understand the external forces that influence a teacher's performance and methods of teaching and learning which are applied to students. However, we will not analyze the educational manager's decision-making process in this dissertation.

In the same way that educational institutions encounter various problems and reflect the nature of education and social sciences theory, there is no single theory of educational management. The six major models of educational management and their corresponding leadership model (Bush, 2006) represent different approaches towards looking at educational institutions and are valid in their analysis, but their relevance varies according to the applied

context. Table 1 shows the main assumptions, characteristics and major features of the six models.

The formal, collegial and political models base their main assumptions according to the dimension of hierarchy and how power is represented. In the formal model, control by the main authority is exercised directly by its legitimization. In the collegial model, the main authority must lead by consensus as power is shared among some or all members and the organization is predominantly normative. In the political model, decisions are made by means of a bargaining process within groups and with too much emphasis placed upon conflicts.

In the other group, the features of the subjective, ambiguity and cultural models are determined by how the organization is managed, according to patterns and systems of how individuals make decisions which influence results. The main feature of the subjective model is a focus on the individual's goals rather than the organization's goals. The ambiguity model is characterized by the lack of clarity about the organization's goals and structure is regarded as problematic with overlapping responsibilities. The cultural model assumes that beliefs, values and ideology are the central features of the organization, emphasizing the notion of a single dominant culture or several subcultures based on multiple group interests.

Each of the six models faces particular problems when managing an organization. For the formal model, conflicts with professional authority can arise. For the collegial model, obtaining consensus can imply a slow decision making process. For the political model, the bargaining process can imply stress on the influence of the interest group. For the subjective model, with so many individuals there are so many interpretations of behavior rather than situations and actions. For the ambiguity model, specific goals may be unclear and for the cultural model, cultural leadership is regarded as the imposition of a culture by leaders on other members of the organization, constituting the root cause of problems. Bush's approach (2006) to classify

educational management models is useful for understanding the cultural environment in which individuals develop professionally. This is particularly so where, in addition to managers and administrator, academics work jointly in mixed activities, stressed by internal and external forces and regulations that come from government and /or accreditation bodies that will create limitations on how or by whom a school should be managed.

Table *1*. Six Major Models of Educational Management

Management model and main assumption for power decision	**Main features**	**Main problems**	**Leadership model**
Formal: Hierarchical led by authority.	1. Organizations as systems 2. Represented by organization charts 3. The hierarchical leaders have control over their staff 4. Goal seeking organizations 5. Managerial decisions through a rational process 6. Principal power is positional. 7. Emphasis on accountability	1. Judging whether objectives have been achieved 2. Rational practice is the exception rather than the norm 3. Underestimates the contribution of individuals 4. Conflict with professional authority 5. Assumptions of stability are unrealistic in contemporary schools	**Managerial** Focus on managing existing activities rather than envisioning a better future for the school.
Collegial: Policies through process of discussion leading to consensus	Power is shared between some or all members 1. Strongly normative 2. Professionals also have a right in the process of decision making 3. Assumes a common set of values 4. Decision making groups should be small 5. Decisions are made by consensus	1. Strongly normative features tend to obscure rather than portray reality. 2. Decision making tends to be slow 3. Sectional interest has an influence on committee's processes 4. Principals remain accountable to various external groups 5. (Hargreaves, 1994) Administration regulated rather than spontaneous 6. Predictable outcomes	**Participative** Normative model, underpinned by three criteria (Leithwood et al., 1999): 1. Participation will increase school effectiveness 2. Participation is based on democratic principles 3. Leadership is available to any legitimate stakeholder
Political: Bargaining process	Distribution of power and conflict is viewed as a natural phenomenon 1. Focus on group activity "baronial politics" (Ball, 1987). 2. Concerned with personal vs. group interests 3. Prevalence of conflict 4. Ambiguous goals are assumed	1. Neglects other standard aspects of the organization 2. Stresses the influence of the interest groups on decision making 3. Too much emphasis on conflict and underestimates the capacity of	**Transactional** Does not produce long-term commitment to the values and vision promoted by school leaders.

	5. Decisions emerge after political bargaining 6. Decision making is determined by political power of individuals and interests	teachers 4. Are not accepted for ethical reasons	
Subjective: Focus on individuals within organizations	1. The beliefs and perceptions of individuals rather than the organization 2. The individual interpretation of behavior rather than situations and actions 3. Individual behavior reflects the aspirations rather than formal roles of participants 4. Subjective approaches emphasize individual goals instead of organization goals	Prescriptive approaches reflect beliefs about the organizations nature 1. Strongly normative, reflect the beliefs of their supporters 2. Emphasize the interpretation of individual's subjective theories 3. Subjective theories imply that meaning is so individual that there are as many interpretations as individuals 4. Provide few guidelines for managerial action	**Post-modern** subjective theorists prefer to stress the personal qualities of individuals rather than the official positions in the organization.
Ambiguity: Uncertainty and unpredictability are dominant features	1. Lack of clarity about the organization's goals 2. Assumes problematic technology in the processes that are not properly understood 3. Characterized by fragmentation 4. Structure is regarded as problematic overlapping responsibilities 5. The model tends to be appropriate for professional client-serving organizations 6. Fluid participation in management 7. Uncertainty arising from the external context adds ambiguity for the decision making process 8. Stresses the advantages of decentralization	1. Difficult to reconcile ambiguity perspectives with the customary structures of school and colleges 2. Specific goals may be unclear 3. Educational institutions are rather more stable and predictable than the ambiguity perspective suggests 4. Less appropriate for stable organizations 5. In practice, educational institutions operate with a mix of rational and anarchic processes	**Contingency** Provides an alternative approach, recognizing the diverse nature of the school context and the advantages of adapting leadership styles to the particular situation.

Cultural: Emphasizes the informal aspects of organizations rather than their official elements.	Assumes beliefs, values and ideologies are the heart of organizations. Focuses on: 1. Values, beliefs of the organization members. 2. Notion of a single or dominant culture in organizations (not always in harmony) 3. Emphasizes the development of shared norms 4. There may be several subcultures based on the various interests of different groups 5. Culture is expressed through ceremonies 6. Assumes the existence of heroes	1. Cultural leadership regarded as the imposition of a culture by leaders on other members of the organization 2. Cannot ensure the emergence of a monoculture 3. Focus on symbols and ceremonies 4. Organizations may be underestimated	**Moral** Leaders have the main responsibility for generating and sustaining cultural core values. It is expected for leaders to focus on the moral purpose of education. Assumes that values and beliefs coalesce into shared norms and meanings that reinforce culture.

Note. This table is based on Bush (2006).

1.5 Research Aim, Research Questions, Scope of the Investigation and Limitations of the Study

We have presented the problems and limitations that an internationalization strategy based on studying abroad represents for both institutions and the majority of students who need to acquire intercultural competence in order to be competitive in the globalized labor market. We introduced the literature which explores the uses of ICT in higher education and, additionally, we have presented the gaps in the literature that are yet to be understood: what does teaching intercultural competence mean? What are the possibilities of providing training in these skills using ICT?

The aim of this study is to understand the knowledge of multicultural experiential learning supported by technology in the link class, a collaborative learning method in order to support student's acquisition of intercultural competence. This study explains the inputs and process for achieving the outcome of intercultural competence in order to understand the knowledge of a multicultural experiential learning (see Figure 2).

The following central research question and sub-questions will be investigated:

Central Research Question: How does a multicultural experiential learning that is technology-mediated through the use of ICT become a potential resource for student's intercultural competence acquisition?

Sub-question 1: What is the insight of intercultural competence for faculty experts?

Sub-question 2: How does this multicultural experiential learning help students to expand their global perspective?

Sub-question 3: Which ICT is preferred by faculty experts to support training in intercultural competence?

Sub-question 4: What are faculty experts' preferences for assessing and teaching IC to students?

Sub-question 5: According to faculty experts, what is the influence of a student's nationality on the learning experience?

Sub-question 6: How do students accept the capabilities of ICT when communicating with partners?

Sub-question 7: How appropriate students find ICT for communicating with partners?

Sub-question 8: What is the pre/post difference in a student's cultural awareness acquisition in an intervened class?

Sub-question 9: What does a link class support students' development?

Sub-question 10: How do national differences affect students' perception of the appropriateness of ICT used in the collaborative link class?

Sub-question 11: Do managers think that technology will support IC learning?

Sub-question 12: How do managers perceive the importance of holding cultural knowledge?

From a literature review, this study incorporates the findings and trends in internationalization of higher education (Knight, 2008), intercultural competence (Orpen, 2003), theories of communication technology (Alavi, 1994; Carlson & Zmud, 1999; Dennis, Fuller, & Valacich, 2008; Newberry, 2001; Rutkowski et al., 2002; Bhaumik, 2012), the collaborative learning methods in education that develop intercultural competence (Brislin,

1981; Landis & Brislin, 1983; Flynn, 1992; Leidner & Jarvenpaa, 1995; Laughton & Ottewill, 2000; Bhaukmik, 2012), cross cultural psychology, cultural models, and cross cultural management.

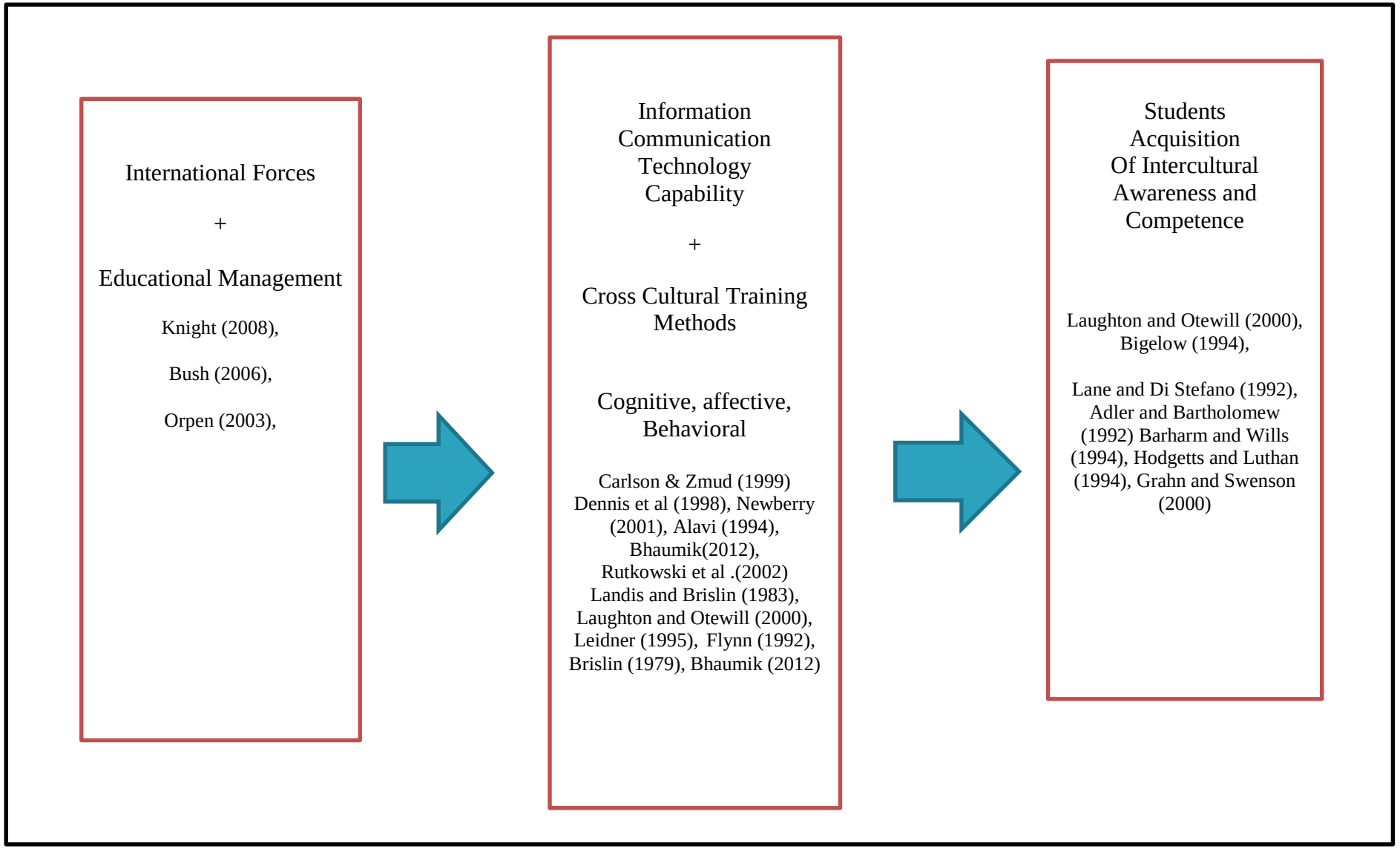

Figure 2. Acquiring intercultural competence through ICT tools: Campus-based internationalization

We seek to know how the process of acquiring intercultural awareness and intercultural competence is possible in a multicultural environment which applies a collaborative learning method using VC. We will focus on studying faculty experts from different institutions around the globe and students of different nationalities who participate in collaborative projects which use ICT tools to facilitate intercultural awareness acquisition and by examining managers' attitudes to IC competence and their vision of technology.

The group of managers comprises of former students from an 'alumni' group from ESAN. Research methods are both qualitative and quantitative.

Limitations

This dissertation is focus on the study of an international and multicultural learning environment technology supported in higher education in a Peruvian University. We do not study elements of multicultural Peruvian characteristics in education, this is a different debate that has been recently part of the attention of the Ministry of Education.

Although we seek to know how the process of acquiring intercultural awareness and intercultural competence is possible in a multicultural environment, we do not study Intercultural assessment.

The decision-making process of educational management will not be studied in this dissertation. We instead investigate the educational management style at ESAN University perceived by managers that are represented by alumni of this Peruvian institution. This identification will permit us to know if faculty are able to participate or not in the decision-making related to their professional activities, as is the case in the link class study where academics implement a collaborative method of technology-mediated teaching that will

contribute to achieve institution's mission to train students so that they can be competitive in the global labor environment.

It should be noted that investigating the relationship between cultural differences and IT adoption will not be incorporated into this study, but may be part of a further analysis. In addition, different learning styles according national differences are not included but warrant future research.

The limitations of this study mentioned will not have a negative impact on the findings nor on the validity answers of the research questions.

1.6 Case Study Definition

According to Yin (2009), case study is a research method that "contributes to our knowledge of individual group, organizational, social, political and related phenomena" (p. 4). It is an appropriate method in many fields of research and will allow the investigation "to retain the holistic and meaningful characteristics of real-life events" (p. 4). This thesis will study three groups—faculty experts, students and managers—to examine how their opinions and preferences intersect. This will generate in-depth insights about the capacity of videoconference to support the acquisition of intercultural competence through a collaborative learning project.

When using the case study method, three conditions should be fulfilled. Firstly, the type of research question posed should be chosen (e.g. how, why, what or how much?). Secondly, the investigator should decide whether their research requires control over actual behavior or events and, finally, whether it should focus on contemporary events as opposed to historical events. Table 2 (Yin, 2009) presents the characteristics of each research method.

Table 2. Relevant Situations for Different Research Methods

Method	Form of research question	Requires control of behavioral events?	Focuses on contemporary events?
Experiment	How, why	Yes	Yes
Survey	Who, what, where, how many? How much?	No	Yes
Archival analysis	Who, what, where, how many? How much?	No	Yes /no
History	How, why?	No	No
Case Study	How, why?	No	Yes

Note. This table is based on Yin (2009, p. 8).

1.7 Thesis Outline

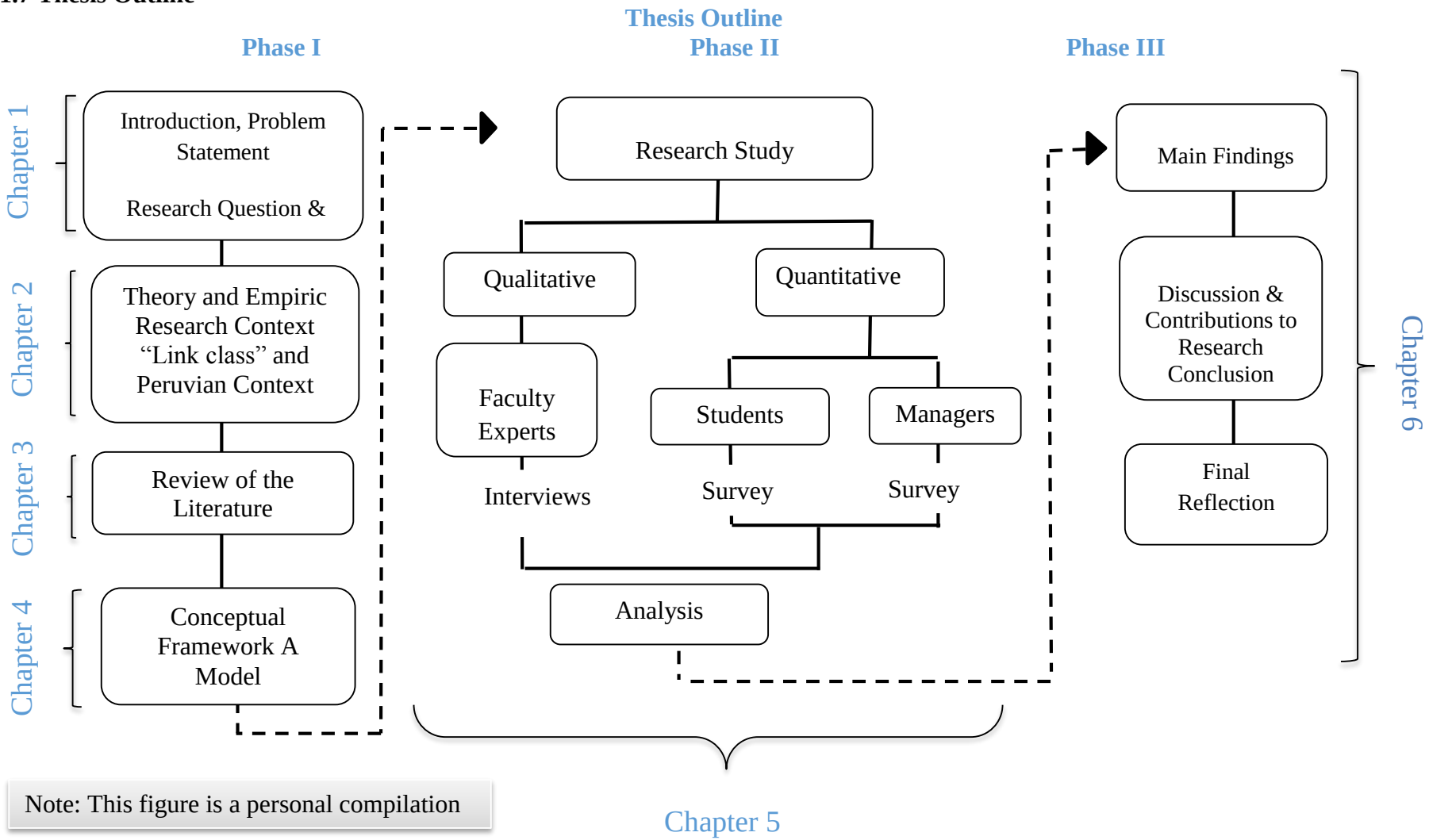

Figure 3. Thesis Outline.

Chapter 1: This first chapter presents the environment of higher education institutions and the problem posed by the high costs accrued when international mobility is the most common strategy applied by higher education institutions for internationalization. Particular attention is given to the acquisition of intercultural competence as one of the skills that international mobility can provide for students who interact in an international environment. Intercultural competence represents the desired competence that job market recruiters currently value most highly in graduates, and therefore demand as a necessity. Information and communications technology, and particularly videoconference facilities, has the potential to contribute in a sustainable way to higher education goals and to support educational managers and faculty to the benefit of students and society. The current research uses case study and triangulation.

This chapter defines internationalization in higher education and presents what supports online and ICT-based educational programs. It explores the current development in technologies which support Latin American higher education, before introducing intercultural competence, educational management and the situation of ICT in education. The first chapter then presents the challenges for higher education in emerging countries and the importance of promoting the outcome of intercultural competence to students. Finally, the chapter presents the research aim and research questions.

Chapter 2: This chapter describes the link class project of the international collaborative course designed in this study and conducted between: Peru–The Netherlands, Peru–Germany, Peru–USA–Taiwan, and Peru–USA–Portugal. Lessons learned from this method are presented. The case of Peru is explained as it represents a scenario with the characteristics of an export-based country where international business opportunities should be supported with a human capital that is appropriately trained to succeed in the international arena.

Chapter 3: The third chapter presents the literature review of intercultural competence, the relevant theories and its foundations in culture and cultural orientation. It presents the theory of intercultural competence acquisition, methods of cross-cultural training and how to select an appropriate pedagogy. Then the chapter discusses the collaborative model of learning using synchronic technology and the impact of media types in communication activities. The following theories and conceptual models are outlined and their incorporation into the research analysis is explained: technology acceptance model (TAM), social presence theory, theory of channel expansion, media perception, media richness theory, and media synchronicity theory. This chapter examines the relationship between ICT and culture and the use and impact of ICT in global virtual teams.

Chapter 4: This chapter based on the theory and empirics presents the conceptual model that support the aim of this study to understand the knowledge of a multicultural experiential learning. The constructs are defined in order to test our model, majority of constructs are based on the literature review and theory of Information System to look faculty experts, students and managers's acceptance of technology for teaching and learning Intercultural Competence. Minority of the constructs are based on the research of Intercultural Competence.

Chapter 5: This chapter presents the studies during the research. Firstly the interviews of faculty experts who adopted mediated technology for teaching in a collaborative learning environment are presented. The chapter then investigates students' participation in an international collaborative link project using mediated technology. Finally, it investigates managers, represented by alumni of a graduate program in management, and their opinion about the importance of considering intercultural competence as a required skill to be competitive in the current labor market.

Chapter 6: This chapter presents the discussion and conclusion, the findings after the research analysis and explains why the study contributes to the field of educational management as an alternative approach to campus-based internationalization. We conclude this investigation by revisiting the original research questions. The correspondents' research questions and the findings in the set of studies 1, 2, and 3 are discussed to improve the knowledge of a multicultural experiential learning with the support of a link class.

CHAPTER 2: RESEARCH CONTEXT, CASE STUDY OF THE LINK CLASS AND CHALLENGES IN HIGHER EDUCATION IN PERU

2.1 Case Study of the Link Class and Project Description of the International Collaborative Course

Introduction

The link class project presented in this chapter is based on the publication by Olivos Rossini, Rincón and Rutkowski (2015). This chapter provides four examples of established collaborative activities supported by the use of technology and strategically organized by faculty experts based in different countries. The need to innovate in education, by offering students another perspective on the new sociocultural and technological requirements of a globalized world, has led to the development of a new kind of education in these virtual classrooms, as in Tilburg University (Rutkowski et al., 2002). Furthermore, the link class project in Peru has offered best practices regarding the importance of managing time, team processes as well as the capacity to select the technology to fit the task that a team of students must complete.

A video resource offers a visual illustration on how this class works, see Clases de Videoconferencia | Universidad Esan (URL: https://youtu.be/MhvW5K0bx8A).

General Structure of the Link Class

Generally, the link class project involves two or more locations with their respective instructors and students. Several weeks before the semester begins, faculty experts coordinate activities both in-class and outside of the class. They agree to guide and conduct the interaction of students using videoconference, set assignments for virtual teams, and guide presentations with

other activities such as online forums and role plays that can be included. The local class is prepared by each instructor.

Faculty select the topics to discuss, focusing on the diverse manners that culture impacts on management and select the assignment students should complete in international teams using other ICT.

During the link class project, Peruvian students participate in face-to-face interaction using videoconference with their peers. They discuss topics related to how differences in culture affect societies, how different ways of behavior impact business practices and leadership styles. Prior to the links, teachers in both locations prepare the students through the introduction of theoretical cultural frameworks. These are useful for international business students as the frameworks enable them to identify behavior and communication patterns as the main characteristics in different national cultures. The benefits of this cooperative model of learning have been reported by Flynn (1992); the study states that this model of learning is more effective than individualistic instructions in terms of increasing individual achievement, positive changes in social attitudes, general enhancement of motivation to learn, generating strategies of reasoning, and greater diversity of ideas, procedures and critical thinking.

In the link class project, the interaction is usually between two small groups (maximum of 18-25 students each) located in different countries. The class method also takes a sociocultural model of learning, which states that knowledge cannot be separated from the historical and cultural background of the learner (Leidner & Jarvenpaa, 1995). Each university maintains authority over enrolling the students in the class and each faculty maintains authority over the system of the final grading, but the grading is agreed for team assignments.

Structure of the Experimental Link Class

The aim of the experimental class includes building the soft skills necessary to work in a virtual collaborative environment and to understand cultural systems and their implications for international business. The course methodology consists of prior lectures in local classes and then active interaction among the students as they link through videoconference. The concepts of culture and stereotypes, intercultural management, leadership across cultures, and global marketing presented in class material are composed mainly of conceptual papers, cases and role-plays that relate to culture theory and its application in management.

Students from participant universities are organized by the lecturers in international teams (members are from each location), composed of 2-4 or 6 students in total depending on the size of the class. The lecturers agree on the groups' schedules and the session's agenda while asking teams to present on selected topics and tasks. A typical first session consists of a warm-up round for students to start communicating and introduce themselves.

After the video conferencing class, the teams use mainly social media to prepare presentations, as well as follow-up discussions and negotiations of tasks and activities. Students have to handle project management forms and agree on deadlines and times to deliver assignments that can include either: an ethnographic report of the two or more cultures interacting in class, a case study for team discussion, an international marketing project focus on the impact of cultural differences on strategies, or a survey report on the comparison of cultures.

2.1.1 The Link Class Project Description: Peru–The Netherlands

Class Structure

In the case of the virtual collaboration link class between Tilburg School of Economics and Management and Universidad ESAN, students had four video-conferences where they discussed their progress on a report. This approach used the similar structure as in "E-collaboration: The reality of virtuality" (Rutkowski et al., 2002) where students were evaluated on collaboration based on the report they co-wrote in virtual teams.

For the virtual collaboration link class between ESAN University and Tilburg School of Behavioral and Social Sciences in the spring of 2013 and of 2014, the agreed format by the two teachers was linking by videoconference one day per week in a 2 hour linking session; the corresponding local time for the joint class was: 8:00 a.m. in Lima, and 15:00 p.m. in Tilburg. Students had 6 videoconferences where they discussed research papers based on cultural differences in society between Europeans and Latin-Americans and the impact of these differences in the work environment. The task of presenters and the task of participants are clearly defined; the presenters in local teams provide scientific information as a starting point for a group discussion in the form of a PowerPoint presentation. The required reading has to be presented in a concise manner, adding personally, culturally or contextually relevant experiences and anecdotes. Furthermore, the presenting team should moderate the session by providing questions relevant to the topic to the whole audience. Participants must at the very least read the abstract/summary of the required readings and prepare one specific question or discussion point relevant to the session's topic.

Figure 4. Link Class ESAN University and Tilburg University 2013

2.1.2 The Link Class Project Description: Peru–Germany

The faculty at Pforzheim University and ESAN University created a project to offer their students another option to acquire intercultural competence by jointly teaching a class of cross-cultural-competencies using videoconferencing techniques. The initial project lasted 2 years, from March 2013 to February 2015.Bremser & Olivos (2016)

Class Structure

At Pforzheim University, students on the International Business program (taught in German, English and Spanish) take part in a mandatory class taught in Spanish called "Gestión intercultural". Subsequently, the name was changed to "Cross-cultural-competencies – Spanish". Teaching contents comprise of theories of culture (e.g. Hofstede, Trompenaars, Hall, Globe etc.) as well as a specific focus on the Spanish-speaking world. Before the project with Peru, several Spanish-speaking countries were presented and their cultures were analyzed through case studies, cultural theories or video clips. In general, the class has between 15 and 25 participants, including two or three exchange students.

At ESAN University, “Global Environment for Business” is an elective course focused on gaining in-depth knowledge of foreign countries, the respective status of economic development as well as its cultural environment for doing business. The concepts about cultural dimensions, intercultural competence, intercultural management, culture and stereotypes, leadership across cultures are presented and discussed. This course has the characteristics of a graduate seminar course and students are asked to work in teams. The learning objective is to build the basic technical and social skills necessary to work in a virtual collaborative environment and in collaborative projects, and to become intercultural competent.

As of March 2013, both classes have taken place once a week in the morning in Peru, from 9:00 a.m. and in the afternoon in Germany at 4:00 p.m. The contents were harmonized and almost all classes were taught jointly by a Peruvian and a German teacher. Exceptions to this structure were national holidays, mid-term exams, or the illness of a teacher. The class languages were Spanish and English, teaching one week in English, the other one in Spanish. For exam requirements, German students had to hand in graded works in Spanish, Peruvian students in English. To acquire cultural knowledge, a variety of techniques were used: case studies, role plays and in-class discussions on topics related to culture (gender roles, status of religion, work ethics etc.).

In addition, students had to prepare a joint presentation in mixed teams about a culture-related topic (developing a product launch for a B2C product in both countries, researching attitudes towards culture in both countries, comparing business models of national champion companies). For this purpose, students were grouped in teams of a maximum of five people and had to decide within their teams how they would collaborate and how they would meet. Mostly, groups chose Skype or Facebook for their meetings but some only exchanged e-mails.

In general, approximately 12 joint sessions of two hours took place, where the last three to four sessions were dedicated to the group presentations.

Figure 5. VC ESAN University Peru, University of Applied Sciences Germany

2.1.3 The Link Class Project Description: Peru–USA–Portugal

Professors from three universities, in Peru (Universidad ESAN), in Portugal (ISCTE BS), and in the United States (Brigham Young University), taught a virtual class from 2009 to 2013 using virtual tools such as videoconferencing, chat and email. All three universities had a mix of students from different countries, but the most diverse group of students was at the university in Portugal which represented five different countries, with the largest concentration from Northern European countries. All of the students were either business majors or minors.

Class Structure

There were 28 class sessions for each class, and 15 of those were joint classes with the other universities. On Monday, the U.S. and Portuguese schools linked together; on Wednesday, the Portuguese and Peruvian schools linked together; and on Friday, and the U.S. and Peruvian schools linked together. The professors identified the following topics to be used in the joint sessions: culture and stereotypes, corporate social responsibility, leadership across cultures, organizational culture, international marketing, global entry strategies, and regional

integration. In addition to the joint sessions, professors held local sessions to help prepare students for the joint sessions and to discuss other topics. For the joint sessions, the professors assigned the same material for students to read from a textbook and from readings placed on reserve in the university intranet.

The format of each session was to split each class in half and have one half engage in a face-to-face videoconference while the other half was communicating with their counterparts using a form of chat through computers. Half way through the class period, the two groups switched places so that each student had the opportunity to communicate through videoconferencing and through a form of chat. Students prepared for the class sessions by identifying a series of questions they wanted to ask their counterparts at the other universities.

Joint Project

The three classes were divided into 10 teams composed of students from the U.S., Portugal and Peru. They were required to operate as a multinational HR team for a U.S. based company given the responsibility of selecting a candidate to be the Managing Director of the company's operations in India. They were given a case with six options and they had to choose their candidate. Students were first required to identify individually who they thought should be selected and why, and they then worked as a team to decide who to select. That gave us the opportunity to see if there are national differences in the selection of the candidate and also find out how the teams reconciled their differences. They were required to write and submit a paper as well as present their results to their respective professors.

Technology

For audio and video real time interaction videoconference was used, linking us up through the internet. The groups who interacted via chat used a virtual space provided by the Peruvian university based on a Moodle platform.

The chat technology was more complicated. Although we started out using a chat function, students rapidly switched to Skype and Facebook as more effective ways to communicate. In addition, some of the teams used google.doc to share files for the final project.

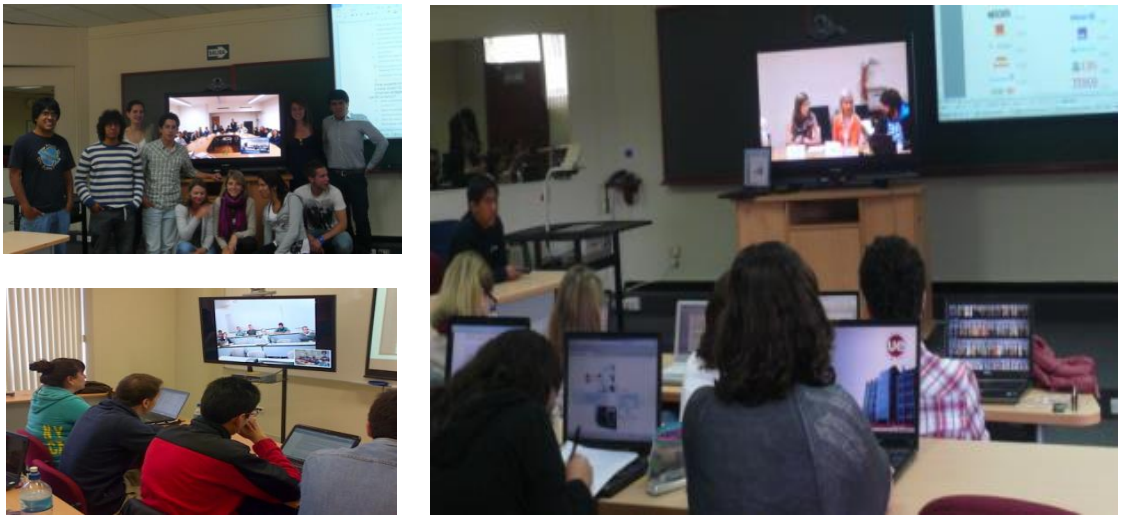

Figure 6. ESAN University Students VC Peru–Portugal–USA

2.1.4 The Link Class Project Description: Peru–USA–Taiwan

Professors from three universities, in Peru (Universidad ESAN), in Taiwan (Fu Jen Catholic University), and in the United States (East Carolina University), taught a triple virtual pilot class in the spring of 2013 (Leibowitz & Olivos, 2013) using virtual tools such as videoconferencing, chat and email. The following is a description of how the class was conducted by the 3 partners:

Class Structure

A total of 56 students participated in this pilot project, the format agreed by the three teachers was to link by videoconference one day per week in a 2 hour linking session between the three

universities at the same time; the corresponding local time for the joint class was: 7:00 p.m. in Lima, Peru, 8:00 p.m. in Greenville, North Carolina, U.S.A and 8:00 a.m. in New Taipei City in Taiwan.

Students' discussions were based on shared readings about intercultural communication, cultural change, theoretical models of cross cultural management such as Hofstede's and Trompenaars, and what differences they can find at the level of cultural patterns in their societies.

Students were asked to work in a collaborative project in teams formed by professors on a random basis. Each virtual team had to consist of students located at the three universities; eight groups were formed with six to seven students in each group. The assignment theme was to define a sub theme on the general theme of "Culture and Technology". Using the Hofstede model as a conceptual framework and analysis, students were asked to select a research question to examine cross-cultural differences between their cultures.

For chat sessions, the university in the U.S provides Saba Centra. This is a webinar platform that combines online meeting and web conferencing. Teachers agree to be responsible for moderating 2 or 3 of the teams during meetings at Saba Centra. Students were asked to select a chair of the session, a note keeper and an editor/compiler.

The chair is a person assigned to keep the group on track and recognize individuals to speak/participate. The note keeper keeps notes of the discussion and makes them available to all group participants after class. The editor/compiler is the person that is responsible for compiling the information made available in class (i.e. images, videos etc.) and updating the progress of the presentation as the class takes place and then making that available to all students. Finally, students should present their projects in a VC session as presented in Figure 7 and Figure 8. An extract of interaction of one of the triple chat sessions with the participation

of students using platform Saba Centra is presented in Appendix Q. This exemplifies the utility of different technology media in a blended method as using chat synchronically supports the collaborative link class (Dennis et al., 2008). Examining the narrative of chat interaction (see Appendix Q), after the protocols of salutations we observed students' discussion about the topic of culture and technology as they asked themselves if the internet would help to reduce cultural barriers or not. They arrived at the conclusion that the internet can positively help to understand cultural differences but that, even though information is there, they should be critical when differentiating true from false information available: *"I don't think technology narrows the cultural difference but it helps us to understand other culture. I think it's two different things".*

Figure 7. Triple videoconference ESAN University Peru, Fu Jen Catholic University Taiwan, East Caroline University, United States (1)

Figure 8. Triple videoconference ESAN University Peru, Fu Jen Catholic University Taiwan, East Caroline University United States (2)

2.2 Lessons Learned

Experience with different link class projects rewards not just the students but also the faculty involved. Extra work is required as the project relies on technological resources in each university; faculty need to book VC rooms or VC equipment, deal with different time zones (see (Alavi, 1994) for further research of the influence of layout and ICT), schedule the support of a tech person to organize the video test and, if applicable, the installation and running of the equipment during the link class. Other resources such as language/communication resources (online dictionaries, language translators), culture context resources (culture specific knowledge bases or experts systems), learning content resources (online tutorials, software applications) are required (Chen, Hsu, & Caropreso, 2006), in addition to instructional planning to cover the analysis of participants' ethnic and cultural background, learning tasks, and to set clear assignments for the teams.

In regard to the students, when asked about what was most challenging about completing the collaborative project, they responded that the challenges included the time differences when organizing extra meetings, misunderstandings, trying to communicate with individuals about their specific part as well as trying to get each member of the group to

complete their tasks. When working with people over the internet, instead of talking to them face-to-face, it was hard to get their points across, especially when some students do not speak English well.

When asked about what was most rewarding about working on this project, some responses were: *"Learning what people from different cultures may do for group assignments, and seeing if my own way of communication works well". "Getting to work under circumstances I'm not usually exposed to and being able to learn from them". "Being able to work with other countries and being able to put together a coherent project in a limited amount of time". "The finished project and seeing how well it all flowed even though we did this many miles apart"*

When we asked what suggestions the students have for improving the collaborative project, some quotes were: *"Using the Facebook as a communication tool might be more convenient to students because almost everyone has a Facebook account." "Smaller groups would be better." "Clear definition and constant definition on who is team leader, etc…*"

Quotes from the students demonstrate that—although there are positive rewards of the link class and ICT in providing opportunities for all students to interact internationally without the limitations of space, time, or economics—faculty and instructors have various challenges in implementing methods that can carefully cover the needs of students for guidance and clarity in how to build their capacities in intercultural competence and virtual teams.

Finally as argued by Moosmayer (2012), flexibility, adaptation and experience of faculty experts are fundamental to the success of the link class; as a benefit opportunities for academic entrepreneurship will arise.

2.3 Challenges in Higher Education and Professionals' Competence Requirement for International Business: The Case of Peru

The challenge for higher education in emerging countries is one of developing and training human capital appropriately. According to Bhaumik (2012):

> Education is a key differentiator at all levels. Just as it can change the complete world view and lifestyle at the level of an individual, at an aggregate level of a community, state or country, it can determine both the direction and rate of economic development. Effective teaching, therefore, has always been considered a sine qua non of good society and, within a society, of good human development. (p. 245)

Universities in countries that are export-based and evolving in the international business sector have an urgent need to provide graduates with intercultural competence in order for them to be competitive and effective when operating in international settings.

Considering the scarcity of financial resources and the high cost of education in emerging countries, it is critical to present alternatives to the traditional mechanism of study-abroad programs that are at present limited to just a few groups of students.

Here it is worth mentioning that expenditure on education and training is the most important investment in human capital as it increases human resources and promotes economic development (Becker, 1993). Likewise, urgent attention must be paid to the unmet needs of populations in regions where poverty and inequality exist, as proposed through the Base of the Pyramid protocol (Hart, 2010). We propose here that these arguments are conceptualizations that should be considered when operational educational management makes curriculum-related decisions which have a direct impact on graduates' capacities and competences. Such decisions

will have a positive effect on the development of their country through increased human capital productivity.

This section presents the context of higher education in Peru and explains the importance of promoting intercultural competence to students, considering the potential activities they will have to undertake in the international business sector and in an export-based economy.

Murakami and Blom (2008) analyzed the cost and access to tertiary education in four Latin America countries (Brazil, Mexico, Colombia, and Peru) and placed their findings within an international context. They found that, as a result of economic liberalization and governments' increased investment in education, demand for tertiary education has intensified. Despite this, the demand for tertiary education is still at only 23% in Latin American countries compared to 56% in high-income countries. Factors that could explain this low rate are the affordability and accessibility of tertiary education, which is evaluated by the following five components:

$$(Education\ Costs + Living\ Costs - Grants - Tax\ Breaks) - Student\ Loans$$
$$= Out\ of\ Pocket\ Cost\ after\ Tax^{4}$$

This calculation represents what a student's family has to pay during their studies. The results are presented as a percentage of GDP (see Figure 9); the out-of-pocket costs of tertiary education in Latin America (60%) are higher than those in high-income countries (19%).

[4] Murakami and Blom (2008, p. 5)

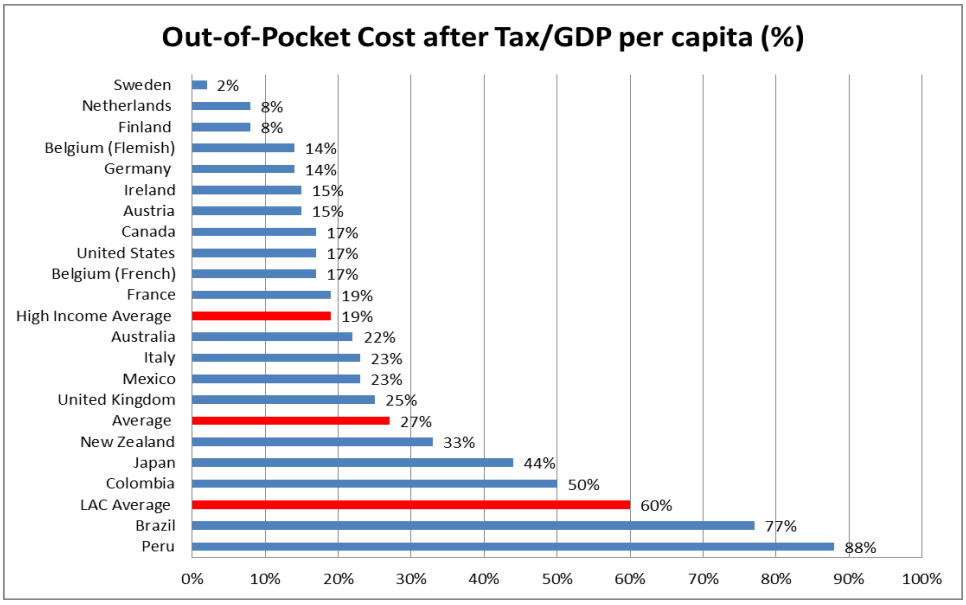

Figure 9. Out-of-pocket costs after tax
Note. This figure is based on Murakami and Blom (2008, p. 19)

In the case of Peru, the availability of grants and loans is low. A few years ago, the current Peruvian government established a program to offer grants to the country's students based in Peru and abroad called *Beca 18*. According to Ministerio de Educación (2015) the institution which manages scholarships in Peru and *Beca 18*, in 2012 scholarships were given to 4,000 students undertaking a bachelor's program. Of these 4,000 students, a total of 3,363 (84.1%) participated in cooperation with a private institution and 637 (15.9%) participated in collaboration with a public institution.

Despite these initiatives, public funds that support Peruvian students pursuing an exchange program abroad are still limited. For the context of this study, apart from the financial support of the student's family, no other sources are available to support international mobility. The limited number of international scholarships available come from the Platform for Student and Academic Mobility of the Pacific Alliance (according to Ministerio de Educación (2015) , a total of 172 Peruvian students benefited in 2013 and 2014) and from international agencies which involve rigorous application processes. These scholarship application processes within international agencies are not only based on high grades, but also on international language

tests and with limitations placed on the age of the student. Candidates who apply should be able to prove scarcity of resources. But, sadly, not all of these scholarships are granted due (paradoxically) to the fact that not enough candidates fulfill the strict requirements (Fulbright Commission, JICA from Japan, British Council, and DAAD among others).

2.3.1 The context of Peruvian higher education

The number of universities in Peru, (SUNEDU 2016)[5] in 2016 is 142 universities. Fifty one (36%) universities are public whilst the other 91 (64%) are private.

To understand the context of Peruvian higher education, it is important to note that out of 30 million inhabitants in Peru, almost 800 thousand students are enrolled at a university according data for 2011 , (latest available census and official data from INEI).From this total majority (60.52%) is enrolled at private institutions. In terms of state support, public universities are financially dependent on the state, some private universities operate with the help of government subsidies and other private universities do not receive any state support. Some of the institutions offer both undergraduate and postgraduate study programs, specializing in specific areas of research such as education, engineering and medicine (Chiyón, Palma, & Cazorla, 2011).

For Peruvian students, the average growth rate of enrollments between 2005 and 2010 was 7.27% (see Figure 10). In terms of enrollment for undergraduate programs, Figure 11 shows the latest available NAR ranking data for 2010. Total enrollment for that year was 782,970 students, of which 50.11% enrolled across 15 undergraduate programs. The study was carried out by the NAR (Dirección de Estadística) and INEI from the latest Censo Universitario

[5] The enactment of Law No. 30220 for the University Law and the Ministerial Resolution No. 354-2014 Minedu deactivated in December 2014 the functions of the ANR (National Assembly of Rectors), which were to be replaced by the National Superintendence of University Education (SUNEDU).

(University Census) published in 2012. The analysis does not take into account programs with different names (even if they are in a related field of study), therefore it only considers 392, 275 enrollments in 2010.

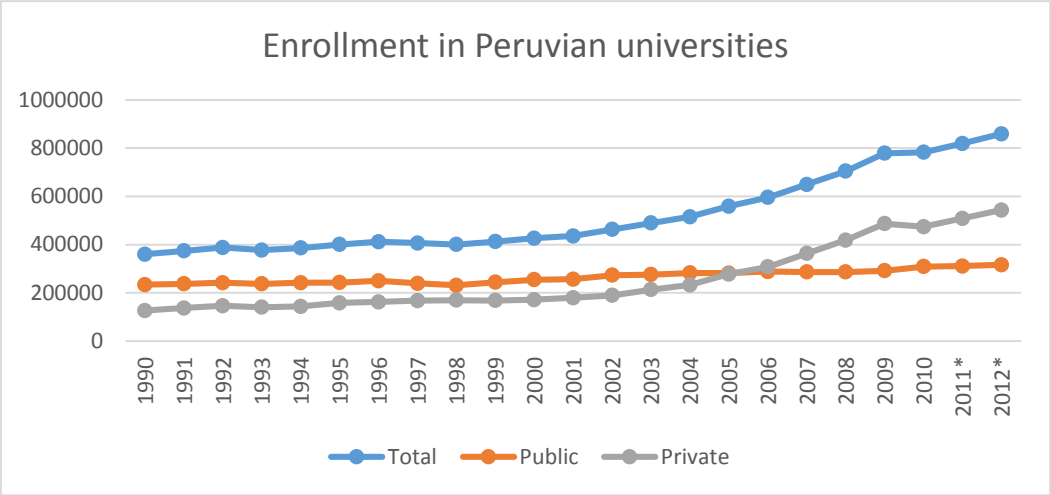

Figure 10. Enrollment in undergraduate programs in Private and Public Universities in Peru
Note. This figure is a compilation of INEI (n.d.) and NAR (2011) data.

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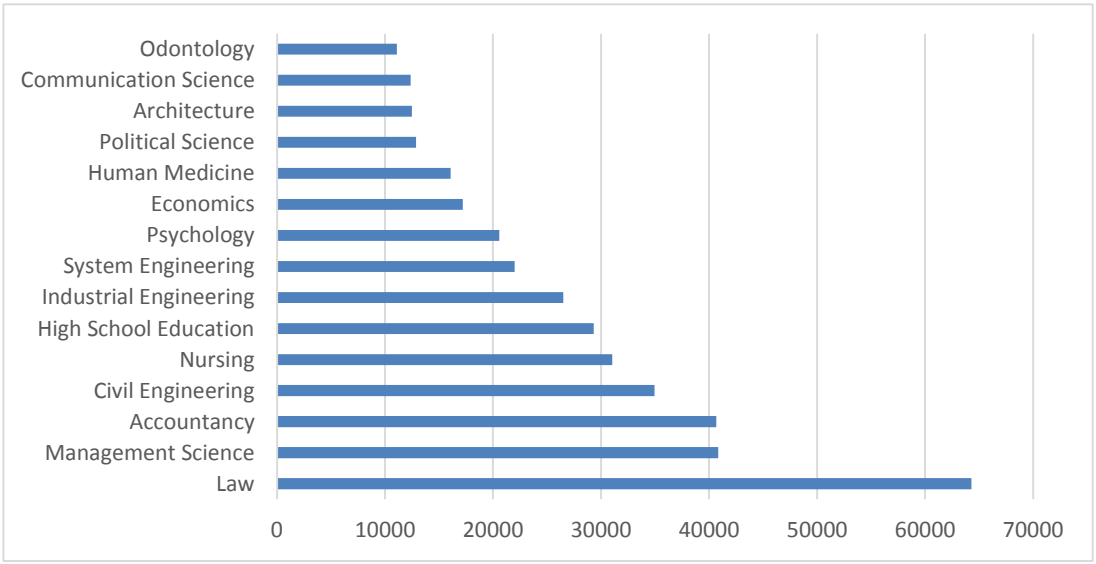


Figure 11. Enrollment in the 15 main undergraduate programs in Peru (2010)
Note. This figure is based on NAR (2011) data.

In terms of the number of students admitted per program, the law program is in first place with 64,282 enrollments (8.21% of the total enrollments), followed by management science

programs in second place with 40,849 enrollments (5.22%). In third place is accountancy with 40,678 enrollments (5.2%). Observing other programs with an affinity to management science, we find the industrial engineering program in seventh place with 26,496 enrollments (3.4%) given the fact that the content of this program in Peru is oriented towards production management. Economics is in tenth place with 17,211 enrollments (2.2%). As such, it should be noted that a large number of Peruvian students enrolled in management science as it accounts for around 16% of the total enrollment.

Decisions regarding the kind of programs and curricula to be offered and launched by university programs in Peru are made internally by each university; until 2014 such decisions were regulated by the National Assembly of Rectors (NAR). Thereafter such decisions were regulated by the National Superintendence of University Education (SUNEDU), recently created by law in February 2015 to supervise the quality of the education service provided by Peruvian universities.

The number of credits is also regulated by law with 200 credits as the minimum to be undertaken over a period of 5 years (an academic calendar year is sixteen weeks). However, it is also possible for Peruvian universities to offer programs with an alternative course duration for programs which are oriented towards adult education.

According to Chiyón et al. (2011), even though public and private universities follow the same education model, there are several obstacles and limitations in the management of university education. There are differences in terms of degrees and titles awarded on behalf of the nation as well as differences in the length of the degree, tuition, system of academic credits, grading scale and the systems for both admission and graduation. As, such the education currently offered by both public and the private Peruvian universities is greatly varied.

2.3.2 Demographics and the socio economic environment in Peru

The latest statistical data released by the National Institute of Statistics and Informatics (INEI, n.d.) states that Peru's population as of December 2014 was almost 31 million, with an annual average demographic growth rate of 1.16%. Peru can be classified as a young country due its young population as 45% of the population are under the age of 24 years.

In economic terms, income distribution in Peru is mainly unequal. As represented in the Leveling Pyramid (see Figure 12), only slight changes of income distribution have occurred in the last forty years.

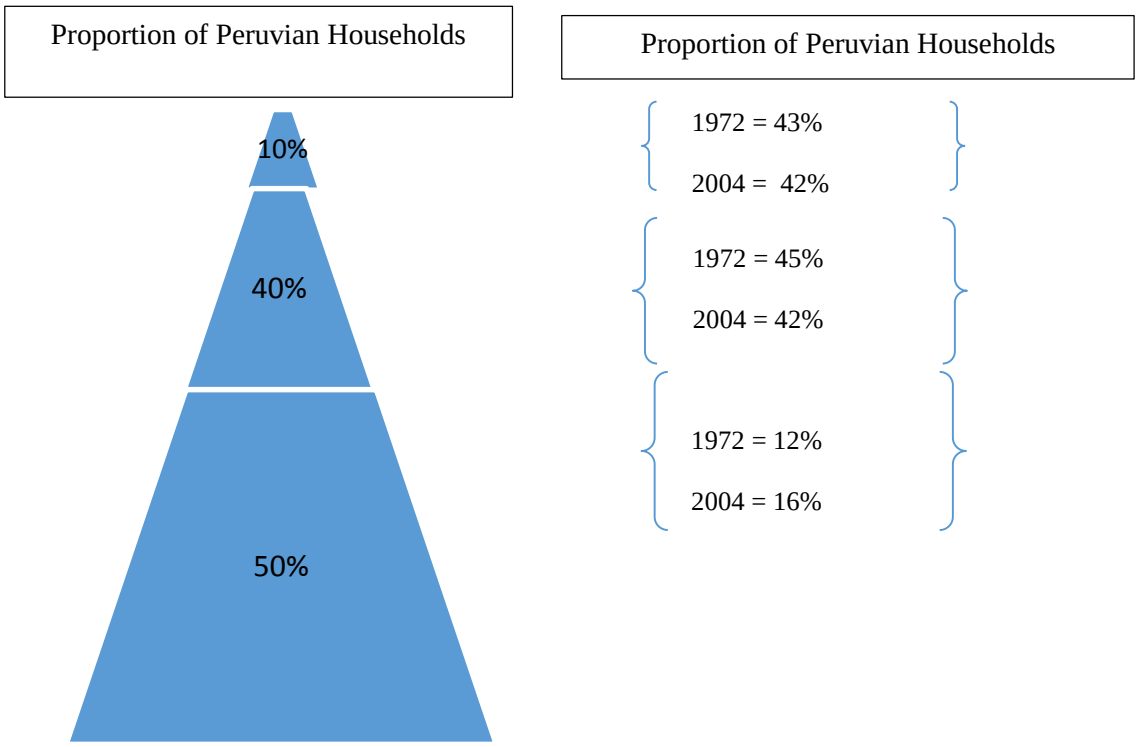


Figure 12. Proportion of Peruvian household income in1972 and 2004
Note. This figure is based on ENAHO (Encuesta Nacional de Consumo de Alimentos 1971/1972 - ENAHO Encuesta Nacional de Hogares 2003/ 2004) and INEI (2012)

The Gini coefficient—the most commonly used measurement of inequality—is a measurement of statistical dispersion intended to represent the income distribution of a nation's

residents; a ratio closer to 1 signifies greater inequality. In measuring the inequality found in Peru, the Gini coefficient reported a ratio of 0.55 in 1972, 0.54 in 2004 and 0.45 in 2012. The top of the leveling pyramid corresponds to the 10% of Peruvian households that generates a concentrated 42% of total household income (2004) and represents socioeconomic levels A and B.

According to ENAHO (Encuesta Nacional de Hogares 2012) (INEI, 2012), socioeconomic level A has an annual household income of US$ 28,236 or higher; for socioeconomic level B, US$ 12,900 or higher. Together these levels comprised 11.2% of Peruvian household income in 2012 (see Figure 12). On the other hand, 40 % of all Peruvian households represented 45% of household income in 1972 and 42% in 2003. In 2012, this figure increased to 50.4% of all Peruvian households with socioeconomic levels C and D measured at a corresponding annual household income of US$ 12,900 and US$ 8,900, respectively.

Finally, 50% of all Peruvian households represent 12% and 16% respectively of the total household income in 1972 and 2003. These households represent socioeconomic level E in 2012, accounting for 38.4% of all Peruvian households earning a minimum of only US$ 3,200 per annum.

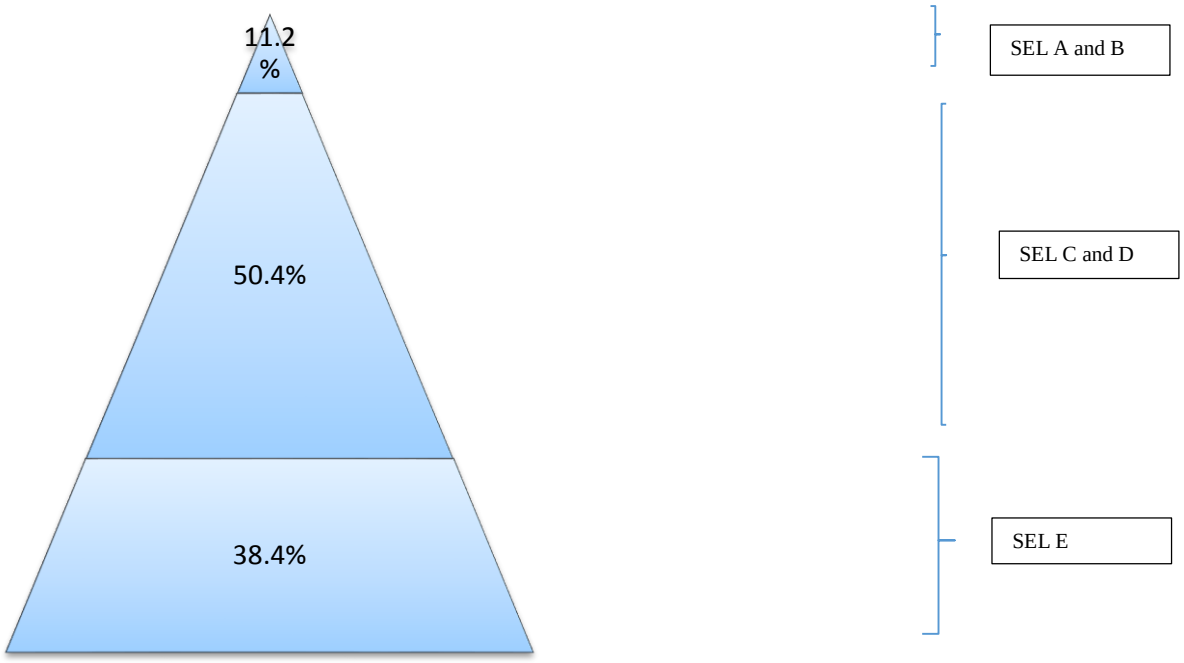


Figure 13. Proportion of Peruvian household income in 2012.
Note. This figure is based on ENAHO Encuesta Nacional de Hogares (2012) and INEI (2012).

The minimum legal monthly wage in Peru (Remuneración Minima Vital) is S/. 850.00 soles in Peruvian currency(Ministerio de Trabajo y Promoción del Empleo, 2016) or the equivalent of 259.14 US$ per month at the exchange rate of S/. 3.28 soles = 1 U.S. dollar (according Superintendence Nacional de Administration Tributaria SUNAT, July 2016). An important sector of the labor force is represented by this socioeconomic level that is characterized by its informality. Informal labor implies that workers do not receive legal benefits such as social security, holidays, a retirement pension, etc.

The World Bank (n.d.) classifies Peru as a country with an upper middle level of income. According to information from the Peruvian Ministry of Economy and Finance (MEF: Ministerio de Economía y Finanzas, n.d.) and the World Bank, the Peruvian economy has had 15 years of continuous growth; see Table 3 for the GDP rate of Peru from 2000 to 2015. The

average GPD growth rate for the past 10 years was 6%. In 2014, the GPD growth rate fell to 2.4%, and in 2015 this rate increased to 4.8%, a more encouraging rate given the many mining projects that commenced operations during this period (BCRP: Banco Central de Reserva del Perú, n.d.; Proinversión Institucional, n.d.).

Table 3. Peru's GDP Rate (VAR %): 2000 - 2015

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0.6	5.5	4.2	5.0	6.3	7.5	8.5	9.1	1.0	8.5	6.5	6.0	5.8	2.4	4.8

Note. This table is based on BCRP Banco Central de Reserva del Perú (n.d.).

In terms of stability, as discussed in the previous paragraph, Peru has been growing at a rate of 6% during the past 10 years, with low inflation (in terms of consumer prices), at an average of 2.87% for the period 2005-2014. Although inflation in 2015 was 3.2%, slightly above the target rate for the year, it remained below the regional inflation rate (9.4%), reflecting Peru's economic stability.

Historically, international trade in Peru has played an essential part in its economic activity (see Figure 14).

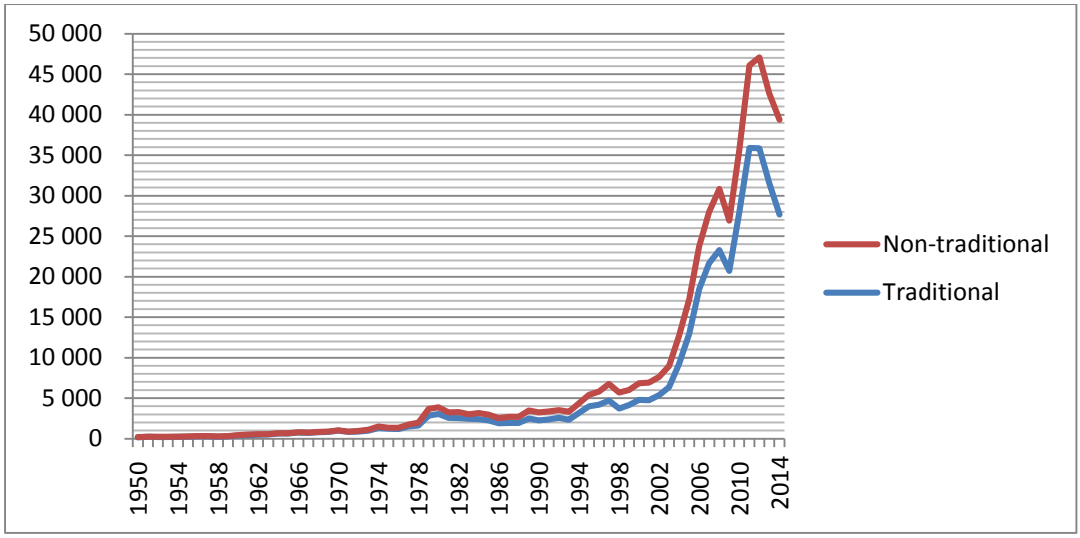


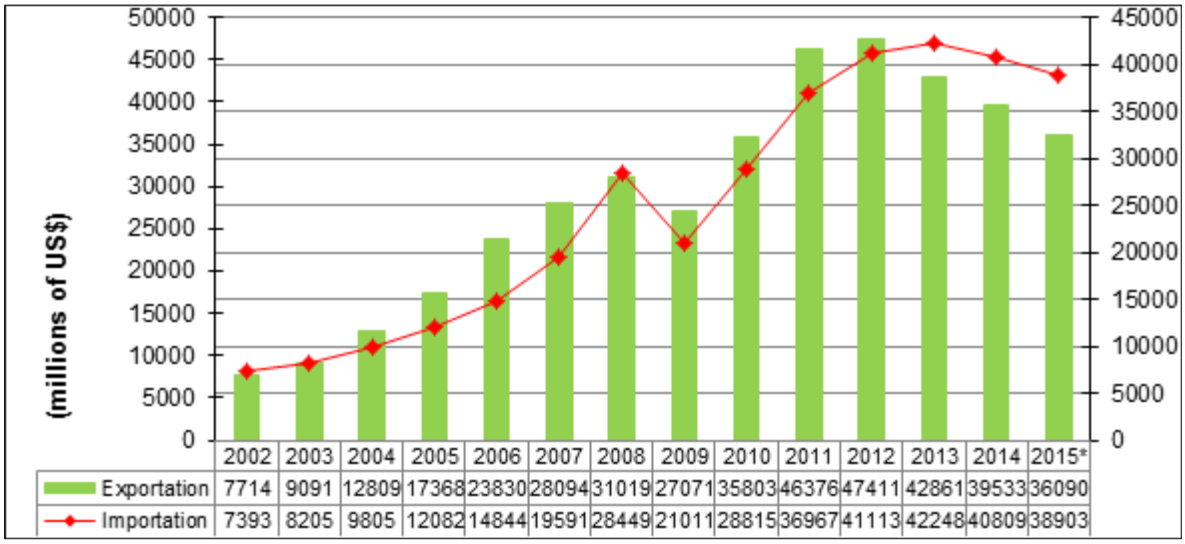
Figure 14. Peru's traditional and non-traditional exports (in millions, U.S. dollars). *Poverty Reduction and Economic Management Network.* Annual Statistics. (BCRP)

In this regard, it is worth mentioning that Peru's exports are classified into two types, traditional and non-traditional. Traditional exports are mainly associated with the export of commodities, raw materials and minerals such as gold, copper, silver, agricultural products, fishmeal, and others. Non-traditional exports are represented by other agricultural products such as fruit, vegetables, cereals, fish products, textiles and mining by-products.

Figure 15 shows Peru's balance of trade according to BCRP: Banco Central de Reserva del Perú (n.d.),. In 2014, export volume reached US$39,533 million, six times more than the level recorded a decade earlier (an annual average growth rate of 21%).

From 2013 to 2014, the volume of traditional exports decreased more than that of non-traditional exports because export prices in 2014 were lower than those of the previous year (BCRP, n.d.). The estimated export figure for 2015 is US$36,090 million; the commercial outlook for the near future is stable and looks promising in the medium-term due to the development of new free trade agreements. One example of such an agreement is the Trans-Pacific Partnership (TPP) which involves the twelve nations that make up 40% of the global economic output. Peru has strengthened trade relationships with other countries through

international investment and bilateral free trade agreements—including the United States of America, the European Union, Chile, Canada, Singapore, Japan, Republic of China, Colombia, Liechtenstein, the Republic of Korea and Mexico—which will positively impact the level of exports.



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015*
Exportation	7714	9091	12809	17368	23830	28094	31019	27071	35803	46376	47411	42861	39533	36090
Importation	7393	8205	9805	12082	14844	19591	28449	21011	28815	36967	41113	42248	40809	38903

Figure 15. Peru's balance of trade (in millions of US$)
Note. This figure is based on BCRP (n.d.) and Proinversión Institucional (n.d.).

According to a Proinversión Report (Proinversión Institucional, n.d.), Peru embraces new opportunities to develop its economy through international business and has become a world destination for investment due to its stable macroeconomic and financial background.

This panorama indicates the importance to Peru of developing not just a technical knowledge of management science in its graduates, but also an acquired intercultural competence for working effectively in international environments and with diverse cultural groups, whether face-to-face or using information and communications technology.

In this scenario, the goal of this research becomes even more significant as we study the outcomes obtained in a major Peruvian university through a link class project to train students in intercultural competence, supported by information technologies. The significance of the

study also extends out to higher education institutions worldwide that must face similar challenges in order to internationalize their programs and curricula.

2.4 Impact and Cost of ICT Implementations versus the Cost of International Mobility per Student

Intercultural competence in the traditional model of internationalization can be acquired, according to a review of the existing literature, through the experience of studying abroad and living in a different cultural environment. Student mobility has been introduced as one of the components in the internationalization strategy of bachelor programs since its creation in the Peruvian University in 2008. In the figure below we can observe the evolution and marked difference in the number students participating in both, i.e. those who are enrolled in the link class and mobility programs (one semester exchange, one year dual degree). Not included in these figures are the participants of other programs abroad such as short programs/summer programs which are usually 2-5 weeks in length.

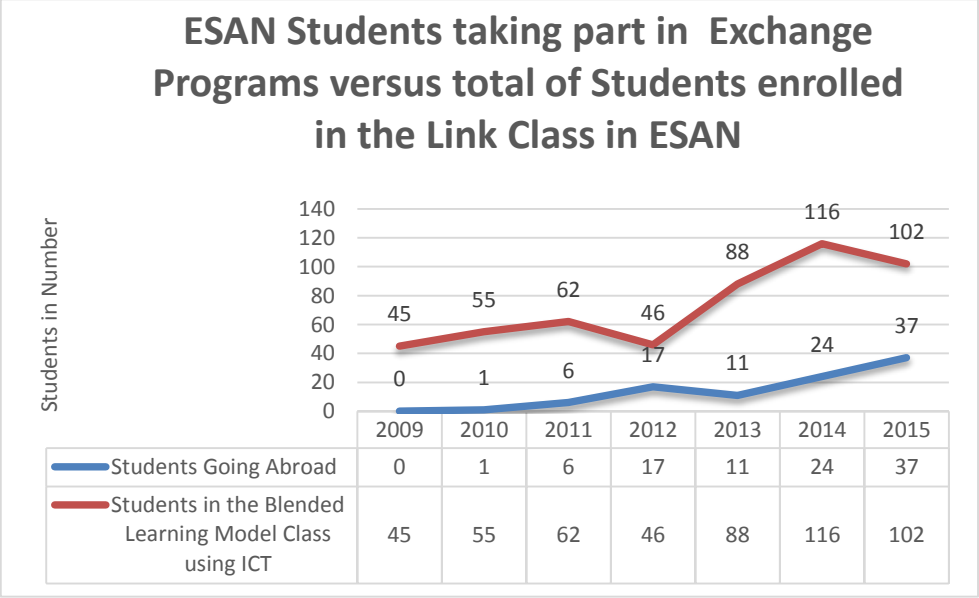


Figure 16. ESAN Students taking part in exchange programs vs. total of students enrolled in the link class in ESAN.
Note. This figure is based on a personal compilation.

Table 4 presents information about the average cost per student for participating in an exchange program abroad, including direct costs, travel expenses, visa fees and the extra cost of housing, books, insurance, etc. The total cost of participation in a program abroad amounts to an average per student of US$ 12, 800 per year or US$ 7,000 per semester. Students' cost for participants in an intercultural competence training program such as the link class corresponds to the institutions' tuition fee. This example gives an estimated cost of US$ 348 per student. This course consists of forty-two contact hours with a teacher and around forty-two hours' contact with partners, working in teams and assignments using diverse mediums such as chat, Skype and email.

Table 4. Minimum Cost to Participate in a One-year Exchange Student Program Abroad (in US$)

Total cost to participate in a one year exchange student program abroad*								
Months	0	1	2	3	…	9	10	TOTAL
Flights	$ 2,000							$ 2,000
Housing		$ 500	$ 500	$ 500		$ 500	$ 500	$ 5,000
Extra (meals, books, transportation)		$ 500	$ 500	$ 500		$ 500	$ 500	$ 5,000
Total	$ 2,000	$ 1,000	$ 1,000	$ 1,000	…	$1,000	$ 1,000	$12,000

*Country destination impact in the final cost for housing and extras, these totals are minimum amounts based on ESAN exchange students' participation.
Note. This table is a personal compilation using data from the ESAN Undergraduate International Office in 2015.

Table 5 shows a detailed explanation of the operating costs in the first year if an institution invests in a videoconference room. In order to produce this table we considered certain parameters. First, the institution would only be using one videoconference classroom equipped

with high definition and high resolution, (see Appendix D and Appendix E for details), amounting to a total cost of US$29,900. Alternatively, it is possible to reduce the investment costs to US$14,200 with standard definition equipment and lower-quality audio and video. Operating costs include maintenance fees, internet service, room rental and the salary of the teacher hired. These costs bring the tuition fees per student to US$348 per course.

The class is based on the student having access to the internet, 12 hours a day, from 8 a.m. to 8 p.m. Second, each class would have twenty students enrolled and the duration of the sessions would be two hours, twice per week, for a semester of 14 weeks. Finally, the academic year is composed of two semesters, from mid-March to early July and from mid-August to early December. On this basis, the institution could enroll up to 240 students per semester, considering the availability of instructors in charge of 48 sessions per week.

Enormous effort will required to coordinate and schedule links, create the content of joined sessions, book conference rooms and organize video tests with enough school partners. To reach the required number of partners will also require an increased institutional effort in administrative support and in training instructors.

Table 5. Investment and Operational Cost of Video Conference Equipment for Institutions (in US$)

Investment and operating cost of Videoconferencing for institutions in US (YEAR 1) High Definition (HD) and High Resolution Equipment								
	Months							
	0	1	2	3	4	....	10	Total
Income								
	-	16,704	16,704	16,704	16,704	16,704	16,704	167,040
Total Income Course tuition fees	-	16,704	16,704	16,704	16,704	16,704	16,704	167,040
Investment budget								
Video Conference System total								
VC Equipment and Installation	12,000							12,000
Television 50" (2)	3,000							3,000
Audio System Equipment	10,000							10,000
Screening System (projector, rack, ecran)	4,000							4,000
Laptop	800							800
Microphone (1)	100							100
TOTAL Investment	29,900	-	-	-	-	-	-	29,900
Operating Costs								
Maintenance	-267	-	-	-	-	-	-	-267
Internet Service		-33	-33	-33	-33	-33	-33	-330
Tech Person Full time		-200	-200	-200	-200	-200	-200	-2,000
VC Room rental		-333	-333	-333	-333	-333	-333	-3,330
Others Costs:								
Cost of teaching (each 4 weeks)		-6,336	-6,336	-6,336	-6,336	-6,336	-6,336	-63,360
SUB TOTAL OPERATING COSTS	-267	-6,902	-6,902	-6,902	-6,902	-6,902	-6,902	-69,287
Income - Operating Cost	29,633	9,802	9,802	9,802	9,802	9,802	9,802	67,853

Note. This table is based on ESAN Finance Department and ESAN-DATA 2015.

Table 6. Parameters

Parameters	N
Videoconference Rooms	1
Students max capacity in each room	20
Sessions (links) per day (8 a.m. to 8 p.m.) 2hours twice per week	6
Number of sessions per week (12 x 4)	48
Number students participating per semester (enrolled)	240
Cost of teaching per session	US$ 33.0
Cost of teaching per week	US$ 1,584
Cost of teaching per month (192 sessions)	US$ 6,336
Tuition fee (116.00 US$ per credit) 3 credits total per students	US$ 348
1/. Sony High Definition Videoconference System - Code PCS-XG55 Audio System Equipment Description See Appendix E	

Note. This table is a personal compilation.

CHAPTER 3. OVERVIEW OF THEORY AND LITERATURE

To fulfill the research aim that will support the understanding of the phenomena of a multicultural experiential learning supported by technology, the following fields of research will be investigated: intercultural competence research, methods of cultural learning; and, from the field of information systems, the theories of the impact of media types on communication.

The definition of *culture,* from the word's Latin roots, means "a cultivating, agriculture," figuratively meaning "care, culture, an honoring". *Culture,* according to the MacMillan Dictionary (2015), encompasses activities related to music, literature and different arts as well as a set of ideas, philosophies and behaviors of a particular association or group of individuals.

It is noteworthy that the meaning of culture refers not just to those elements that are perceived as visible expressions of a community—such as outward behaviors, symbols, law, customs, rituals, manners, music, art, food and drink, dress, and greetings—that an outsider can easily observe. Instead, there are also cultural manifestations that are less easy to identify or recognize by direct observation, such as the inner elements of culture composed of orientation patterns. Another manifestation of culture can be found in particular expressions of communications, aesthetics, time coordination, and individual accomplishment (Bonvillian & Nowlin, 1994). Guy & Mattock (1991) based their schema on three main determinants of culture, religion, history, and topography (Laughton & Otewill, 2000, p. 379).

Extending the way in which *culture* is defined, Bolten (2014) made an analogy between the formations of cultures and how a sand dune is formed in the *Dune Model of Culture* to emphasize the importance of understanding that views of culture are subjective and dependent on perspective and context. That is why, Bolten (2014) adds, that "an integrated

method of continuous zooming in and out when describing cultures is helpful; in order to do justice to a culture as a structure, and as a process" (p. 5).

3.1 Intercultural Competence vs. Cross-Cultural/Transcultural Competence Conceptualization and Approaches

How is knowledge on the topic of intercultural competence structured and organized?

In intercultural competence research there exists, according to Gröshke and Bolten (2012), a variety of different models and conceptualization with little agreement of its constitution (Deardorff 2004). Perspectives for its definition can derive from culture-general and culture-specific models and from different disciplines such as communication, psychology, management studies.

According anthropological approaches, culture focuses on a cognitive level and is defined as a "shared knowledge community that allows its members to interpret, categorize, and evaluate behavior within a shared framework" (Gröshke & Bolten, 2012, p. 49).

A schema to present the main differences in the definition of intercultural competence between the "Interculturalists vs Anthropologist/ Ethnologists" (based on the work of Müller-Pelzer (2016)) is presented in Table 7. Both conceptualizations have a different approach, and it does not imply a value judgment. "Interculturalists" or transculturalists hold an analytical perspective that observe reality from the distance and from top to down. According to Bolten (2013), an anthropological and truly intercultural perspective is a hermeneutic perspective that interpret culture.

Table 7. Main Characteristics in the definition of Intercultural Competence between the "Interculturalists vs Anthropologists/Ethnologists"

From/ According to	**"Interculturalists"** Transcultural (cross-cultural) Competence	**Anthropologists / Ethnologists** Intercultural Competence
Objective	Competence of action, "savoir prognostique" Skill, know-how to Prognosticate (what is likely to happen in a particular situation)	Understanding others
Notion of culture	Stable entity. Collective programming	Fluid entity. The Result of social action
Differences	Standardization. Universal dimensions	Singularity, Individuality
Perspective	Top down, distance, Constellations to control diversity	Bottom up, proximity, situations of inclusion, difference = value in itself
Competence	Transcultural (cross-cultural) Toolbox, Practical "savoir" = relevant data about the circumstances Collective norms ("Cultural dimensions")	Intercultural, Holistic experience, searching for a "savoir intersubjective" = subjective experiences, habitudes, norms, rites.

Note. This table is adapted from the French version in (Müller-Pelzer, 2016).

Gröshke and Bolten (2012) explain the most influential approaches as follows:

The adjustment approach focuses on the ability of the individual to adapt to a foreign culture, such as during overseas assignments or migration (Gröshke & Bolten, 2012, p. 47). Interestingly, their research states that these criteria are questionable, as adaptation is not an indicator of intercultural competence.

The personality approach, as part of the psychological approach, considers an individual's behaviour competent when qualities such as tolerance, optimism, confidence, initiative and independence are demonstrated (Gröshke & Bolten, 2012). Furthermore, the way

in which a person deals with prejudice, stereotypes, and ethnocentrism is considered (Brislin, 1981).

For the communication approach, Hall (1959) states that intercultural competence implies an interaction with members of other cultural and demonstration of skills or manners needed to communicate that include respect, sensitivity, relational orientation and appropriateness.

The cultural intelligence approach or CQ "consists of four dimensions: (1) knowledge and cognition (knowledge of other cultures), (2) meta-knowledge (cognitive strategies for the development of coping strategies), (3) motivation (e.g., self-efficacy), and (4) ability to act (action repertoire of culturally appropriate behavior" (Gröshke & Bolten, 2012, p. 55)

For the management approach, the literature review shows how intercultural competence is conceptualized by researchers in a way that is based on both social and cognitive aspects of individuals. These individuals are represented, for example, in organizations by managers and employees and in academic organizations by faculty (teachers or trainers) and students.

3.2 The Role of Cultural Norms for International Managers

Being a competent international manager means having the skills to operate effectively in the activities that take place in a diverse cultural environment. These management activities will be referred to as cross cultural management; according to Soderberg and Holden (2002), cross cultural management is a discipline with undefined borders in management science. Among management scholars, this term refers to procedures and policies concerned with leading employees from different cultural environments, as well as the way to moderate the impact of cultural differences when tasks are performed. Soderberg and Holden (2002) explain that the

international management field has evolved in the last forty years because of the changes in practice within a business world that is becoming more globalized. Their study argues for a new way to describe cross cultural management, based primarily on the new economy but with emphasis also placed on networking, team-working, organizational learning and knowledge which transcend organizational, industrial and national boundaries. Based on this, they argue that cross cultural management is a form of knowledge work.

The field of cross cultural management according Adler and Bartholomew (1992) is about how people in international organizations behave. They describe and compare organizational behavior within countries and cultures with an aim of understanding and improving the interaction of co-workers, clients and suppliers. Cross cultural management spreads out from the scope of domestic management to include international and multicultural spheres.

Table 8. Perspectives of Intercultural Competence (IC)

Gröshke and Bolten (2012)	A situation-specific performance and developmental variable that differentiates between high and low-performing individuals in intercultural situations. Sub-constructs: affective, cognitive and behavioral
Laughton and Ottewill (2000)	Cross cultural capability and cultural awareness development
Bigelow (1994)	Characteristics of socialization, such as to establish relationships, to act diplomatically, to be sensitive, adaptability, multiple perspective thinking.
Lane and Distefano (1992)	To be able to communicate, to manage change or transition, a cross cultural business skills. Work with others and in teams.
Adler and Bartholomew (1992)	Holding cross cultural business skills as global perspective, local responsiveness, transition and adaptation, cross- cultural interaction, collaboration and foreign experience.
Barham and Heimer (1995)	Able to manage personal effectiveness for international business, to championing international strategy, to operate as cross-border coach and coordinator, to act as intercultural mediator and change agent.
Barham and Wills (1994)	International management competence, cultural empathy, resilience and risk acceptance. Psychological maturity (curiosity to learn).
Hodgetts and Luthan (1994)	Characteristic of managers who are more able to think internationally: to have patience, empathy, honesty, broadmindedness, flexibility. To consider feelings and impressions more important than factors and information
Hofstede (1988) Hofstede, G. & Bond, M. H.(1988)	IC implies the knowledge of culture orientation in each society, according their five common problems: hierarchy, gender roles, search for truth and time (Confucius).
Hampden-Turner and Trompenaars (1993)	IC implies the knowledge of culture through the way people resolve dilemmas which emerge from five universal problems: relational orientation, time orientation, activity orientation, man-nature orientation, and human nature orientation
Brake (1995)	Cross cultural skills acquired after a process that imply open attitudes, self-awareness, and cultural knowledge.

Note. This table is a personal compilation. The terms used to define the concept of intercultural competence in management approach are either as: cross cultural capability (Laughton & Ottewill, 2000); cross cultural business skills (Adler & Bartholomew, 1992; Lane & DiStefano,

1992; Bigelow, 1994); international management competence (Barham & Wills, 1994; Hodgetts & Luthans, 1994; Barham & Heimer, 1995) and cross cultural competence (Grahn & Swenson, 2000). There are two dimensions, the first dimension in intercultural competence is represented by the social aspects of the individual and the second dimension is cognitive.

This first dimension in intercultural competence is expressed by certain characteristics of socialization such as the ability to establish relationships, to act diplomatically, to be sensitive (Bigelow, 1994), to be able to communicate, to manage change or transition (Lane & DiStefano, 1992), to be adaptable and to collaborate (Adler & Bartholomew, 1992), to be empathetic and to evidence emotional energy (Barham & Heimer, 1995), and to consider feelings and impressions more important than factors and information (Hodgetts & Luthans, 1994). So, intercultural competence has social dimensions that identify the individual as someone able to establish interpersonal relations, based on their abilities to bond with individuals of a different cultural background with different values and behavior.

The second dimension in intercultural competence is cognitive. In that sense it is an intellectual dimension and includes the development of skills such as multiple perspective thinking, attitudes and perceptions (Bigelow, 1994), capacity for communication and transfer of knowledge (Lane & DiStefano, 1992), synergistic learning (Adler & Bartholomew, 1992) and competences such as championing international strategy (Barham & Wills, 1994).

Alternative approaches in studies to compare cultures

Dimensions in Hofstede (1988)

Hofstede (1988) identified five problems that each society faces: identity, hierarchy, gender roles, search for truth and time orientation.

The orientation of individualism/collectivism refers to the identity attribute of how individuals make their decisions in consideration of the self or of the group. Within an individualistic culture, independence is highly valued, the individual ("I") predominates over the collective ("we"). At the other extreme, in the collectivist culture, individual interest is subordinate to group interests; identity is based on the social network and loyalty is highly valued. A significant characteristic of individualistic societies is that they are more goal-oriented than collectivist ones in which decisions are made which consider the whole group.

Hofstede's "search for truth" orientation defined uncertainty avoidance as "to what extent a culture programs it members to feel comfortable or uncomfortable in unstructured situations" (Hofstede, 1988, p. 11). Cultures where uncertainty avoidance is high tend to be strict on norms, rules and security measures. They tend to be more emotional, less tolerant of behavior and of opinions that differ from their own and less relativist on a religious level compared to cultures with low uncertainty avoidance. Figure 17 compares the common negative relation between dimension levels of individualism vs uncertainty avoidance in wealthy country cultures. Figure 18 compares the common positive relation between the dimension levels of collectivism vs uncertainty avoidance in cultures in less wealthy countries. This is reported using country dimension scores from Hofstede's study (1998); for example there is a negative relation between individualism and uncertainty avoidance for United States, Australia, United Kingdom and between collectivism and uncertainty avoidance in Latin American countries.

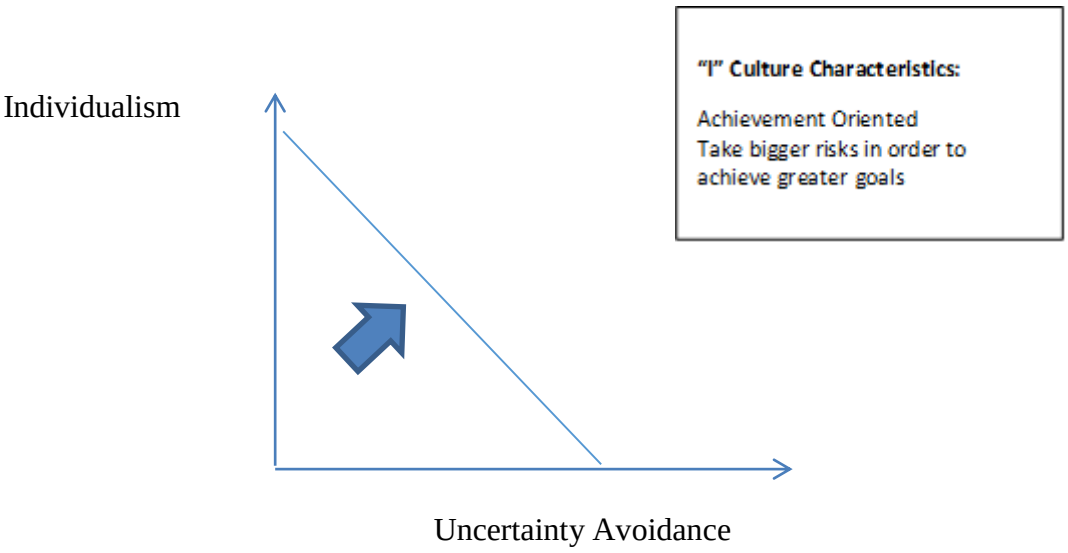


Figure 17. Cultures' common relation between individualism and uncertainty avoidance dimension

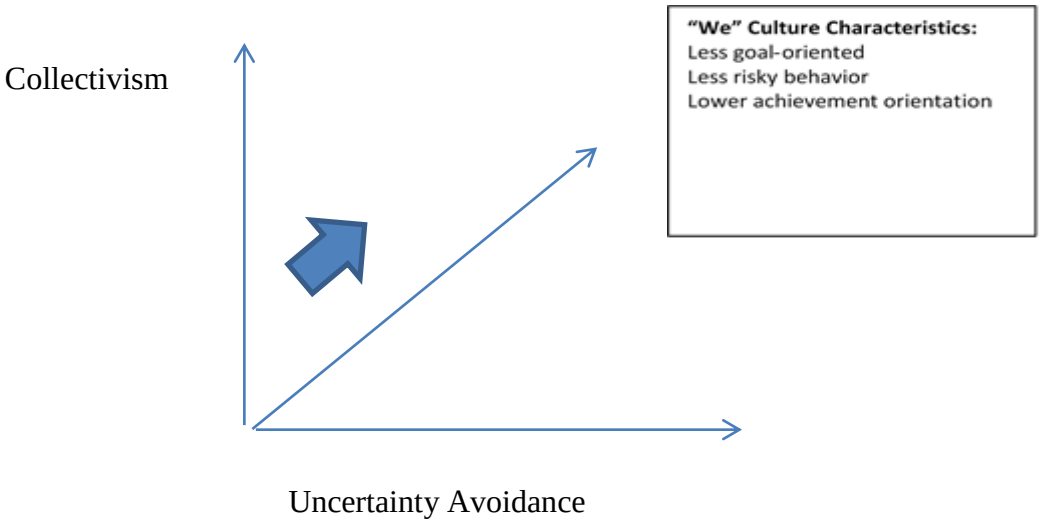


Figure 18. Cultures' common relation between collectivism and uncertainty avoidance dimension

Note. These are personal compilations.

According to Hofstede (1980), the basis of the theory of cross cultural management is that common and fundamental problems arise in each society or country. Hofstede initially proposed the following four dimensions: the level of identity of individuals, (individualism-collectivism); hierarchy (power distance); gender (masculinity- femininity); and truth (uncertainty avoidance). All of these dimensions are resolved differently and, as it has been empirically demonstrated (Kolman, Noorderhaven, Hofstede, & Dienes, 2013), are related to many aspects of management and organizations: power distance correlates with the approachability for subordinates of the boss; individualism-collectivism correlates with negotiation behavior; uncertainty avoidance correlates with job satisfaction; and the masculinity- femininity dimension correlates with the percentage of female managers.

Hofstede (1980) developed his model through the analysis of an employee attitude survey applied in IBM from 1967 to 1973. More than 116,000 questionnaires were collected, translated into 20 different languages and applied in 72 countries. The questionnaire contained 150 questions and 60 of them were on the employees' basic values and beliefs that serve for measuring culture. It is important to note that the groups in each country consisted of similar profiles in terms of education and employment. Questions examined the preferred characteristics of a job (among them: earnings, job security, cooperation) and the preferred style of leadership (from more to less directive). A total of 53 cultures were targeted for comparison (Hofstede, 1988). The research produced a ranking whereby countries were positioned based on each of the four dimensions (power distance, individualism, masculinity and uncertainty avoidance) on a scale of 100 points. At an organizational level, the national culture identified will have an impact on the kind of behavior and situations expected in any of the dimensions, affecting people's motivation.

With regard to the power orientation dimension, Hofstede defined it as "the extent to which the less powerful members of organizations and institutions (like the family) accept and expect

that power is distributed unequally" (Hofstede, 1988, p. 10). This dimension refers to hierarchy which can be found at both the national and organizational level. Hofstede (1988) argued that it is defined from below, not from above, and is endorsed by the followers as much as by its leaders with levels differing between cultures.

Through the Chinese Value Survey (Eastern Instrument), Hofstede and Bond (1988) later developed and introduced a fifth dimension in the model: the long-term versus short-term orientation (Confucian dynamism). The values associated with this dimension are the relative importance of persistence; ordering relationship by status; thrift; having a sense of shame for the long-term and respect for tradition; social and status obligation; and saving rather than spending (Johns, Smith, & Strand, 2003).

Dimensions in Hampden-Turner and Trompenaars (1993)

The basis of the model created by Trompenaars & Hampden-Turner, (1997) established that culture is the way people resolve dilemmas under basic assumption areas (see Figure 19). This basic assumption areas are in relation to the individual to others (human relations 1 to V), in relation to time (VI), and in relation to people to nature (VII). Each of this seven dimensions are explained as follows.

The universalism vs. particularism orientation refers to specific characteristics related to why members in society follow general rules. In universalism, a society's orientation is to follow general rules as a moral obligation. In particularism, society's "particular" circumstances are more important than rules.

Communitarism vs. relationships or collectivism vs. individualism orientations refer to how decisions are taken between the individual vs the group. Individualistic societies see the individual as ¨the end¨ and improvements to collective arrangements become the means to

benefit the individual. Collectivism sees the group as its "end" and improvements to individual capacities are a means to that end.

Affective (expressive) vs. neutral orientation refers to whether emotion or reason dominates in relationships. In specific vs. diffuse, a diffuse orientation strategy is aimed at expressions that respect long-term relationships and loyalty to a company, suppliers and clients.

The achievement vs. ascription orientation refers to how societies accord status. In some societies status is accorded on the basis of people's achievements, referring to their activities, and others to the ascription that refers to being, (by virtue of age, class, gender, education).

The orientation towards time—i.e. the relative importance cultures give to the past, present and future—has a strategic process in which two elements need to be considered: linked to the future or reviving the past. The case of the future could be either the near future, the extended future or both.

Internal vs. external control is concerned with the nature of ¨control or subjugation¨ to the natural environment. In some societies, individuals appear to orient their actions towards others, focusing on their environment rather than themselves.

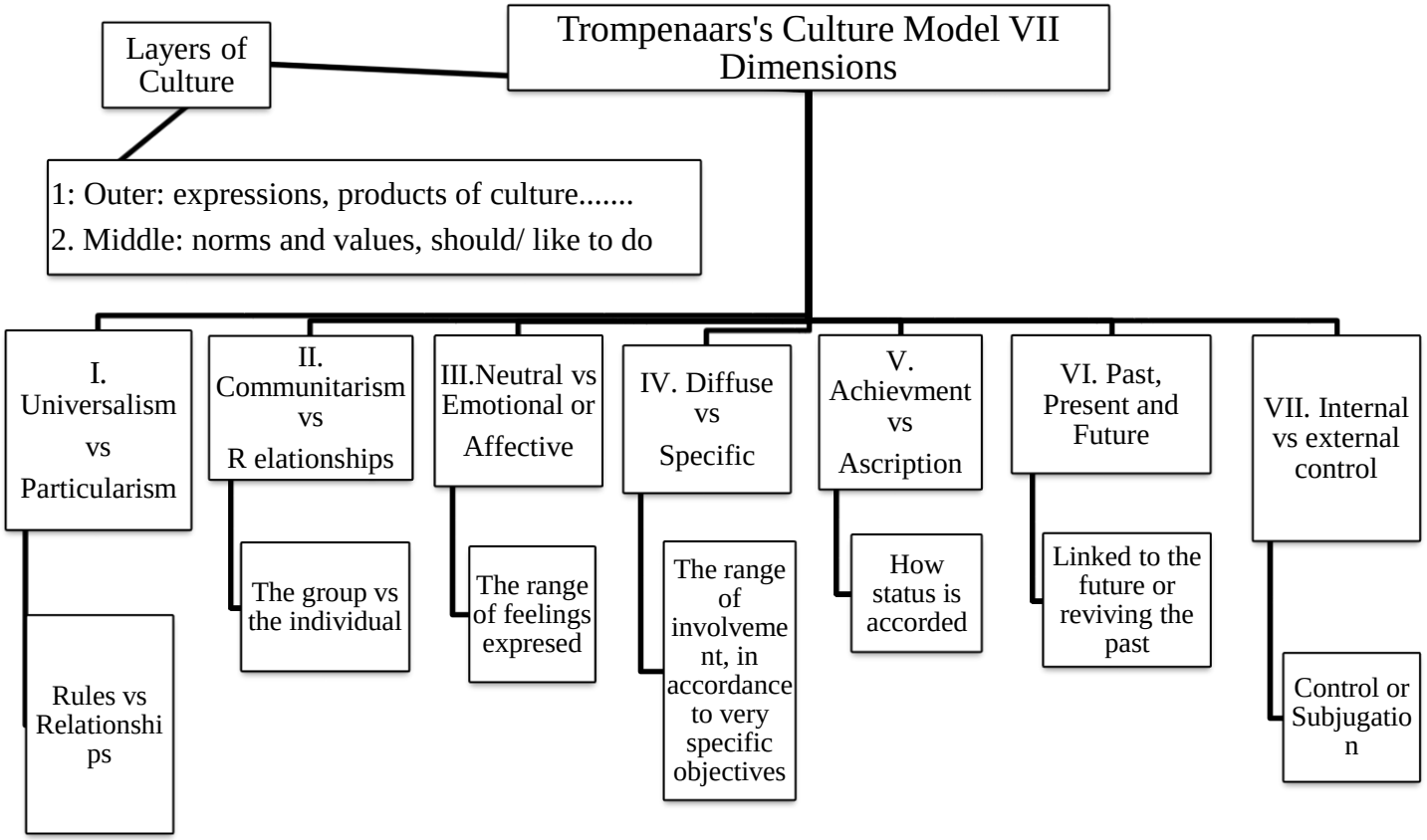


Figure 20. Seven dimensions of Trompenaars' culture model

An awareness of this approach of problem-solving is extremely useful for international management as employees, executives, and international managers each rely on the benefit of more successful interactions.

Other studies to compare cultures:

Bhawuk and Brislin (1992) and Hui and Triandis (1986)

Other studies to compare cultures have been carried out by Bhawuk and Brislin (1992) and Hui and Triandis (1986) who grouped collectivism into six categories: (1) people's worry about how their choices could affect others in their collectivity; (2) the sharing of materials and non-material resources such as time; (3) affection, fun or giving up some interesting activities for a member of the group; (4) the willingness of people to accept the opinions and views of others, suggesting a willingness to conform; (5) a concern for face-saving or gaining the approval of the collective; and (6) a belief in the correspondence of one's own outcomes, both positive and negative, with the outcome of others and feeling of involvement in other people's lives.

Bhawuk and Brislin (1992), Bellah, Madsen, Sullivan, Swindler and Tipton (1985)

According to Bhawuk and Brislin (1992), Bellah, Madsen, Sullivan, Swindler and Tipton (1985) found individualism to be a concept with the following aspects:

> Self-reliance, independence and separation from family, religion and community, hedonism, utilitarianism, and emphasis on exchange (helping the community only if the individual gets something), competition, equity and fairness in the distribution of rewards, trust in others, emphasis on competence, involvement in community life (can switch from one to another activity according to its interest), equality of people and the rejection of arbitrary authority, the self as the only source of reality. (Bhawuk & Brislin, 1992, p. 417)

Cultural Orientations

Schein (1985) defined a three-level model of culture that ranges from the more observable (artifacts) to the less observable. In the first level, basic assumptions represent the belief systems that individuals have toward human behavior, relationships, reality and truth. At a second level, values (which reflect underlying cultural assumptions) answer the question of why people behave the way they do. At a third level, cultural artifacts are the most visible (art, technology, myths, heroes, language, rituals).

Culture, according to the normative approach, is dominated by patterns or cultural orientations (see Figure 19) which are the preferences for certain outcomes over other beliefs, behaviors, and key components in individual and national cultures (Brake, Walker, & Walker, 1995).

According to Kluckhon and Strodtbeck (1961) a culture value orientation is a "generalized and organized principle concerning basic human problems which pervasively and profoundly influences man's behavior" (Maznevski, DiStefano, Gomez, Noorderhaven, & Wu, 2002, p. 276).

The set of variables in the diagram below represents orientations that are expressed in different forms within any society. Outsiders, when interacting, could find situations that may result in conflicts, hence the importance of understanding the deep cultural orientations in each society, particularly in business practices when managers must participate in international negotiations and international trade.

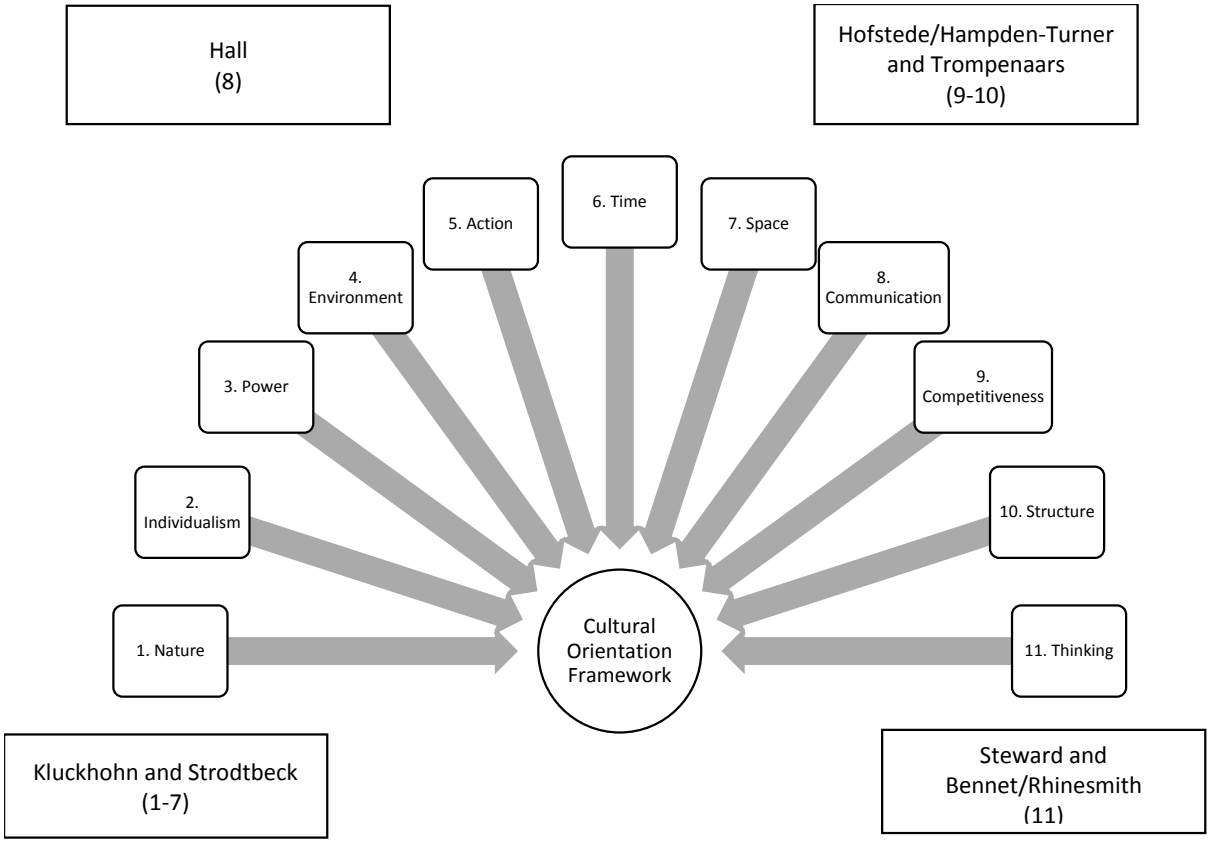


Figure 21. Pattern of cultural orientations: variables that represent each cultural orientation.
Note. This figure is based on Brake et al. (1995) and Maznevski et al. (2002)

What orientation defines a culture?

A diagram that summarizes this holistic concept of cultural orientation is presented in Appendix F. An interpretation of what orientation defines a culture using this approach is made following the principle that characteristics will be identified according to the orientation of each culture and their meaning (Brake et al., 1995).

The different orientations or variables are: (1) *nature*; (2*) individualism*/*collectivism* or the decision making in consideration to the self or to the group; (3) *power orientation*, referring to the hierarchy between individuals as equal or unequal; (4) *environment*, the control of destiny and own environment; (5) *action dimension*, where the options for decision taken can either be with regards to relationships with people or with regards to the task; (6) *time*, by how individuals consider time, if short- or long-term oriented; (7) *space orientation*, if the

preference is for being physically close to or far from other individuals, for keeping family information private or not; (8) *communication*, in a high or low context, oriented to relationships or not; (9) *competitiveness orientation*, referring to the competence and achievements among individuals or as a cooperative; (10) *structure orientation,* if rules are more dominant than relationships or vice versa, and finally; (11) *thinking orientation*, if the dominant thinking is deductive or inductive reasoning, linear or systemic.

To what extent is it useful for a manager to be aware of the cultural orientation in their working environment? We argue that it is critical; managers leading diverse cultural working teams, who are not aware of the importance of recognizing different patterns of behavior in their job environment, would face conflicts as a consequence of their misunderstanding, unexpected preferences and values, and different conceptions of the cultural orientation.

The first orientation classifies the nature of humans, which can be good or evil (Maznevski et al., 2002). Second, the individualism/ collectivism or identity attribute was the source and subsequent foundation of the theoretical model of Hofstede (1988) according to Maznevski et al. (2002). In the third power orientation, hierarchy values in cultures can be placed at two extremes: the hierarchy value that emphasizes power differences between individuals and groups and the equality value that emphasizes the minimization of levels of power, and where participation in decision making is often encouraged. Exponents of these dimensions are Hofstede (1980) and Trompenaars (1993).

The fourth orientation is the environment orientation, referring to three different possibilities which may arise to define people's belief: control, harmony or constraint. When control dominates, people believe that they can dominate their environment and shape their own destiny. In the harmony orientation, flexibility is allowed for environmental changes and societies behave accordingly. When the constraint orientation dominates, people are concerned

by the world around them and things get done through relationships rather than with an emphasis on control systems.

The fifth orientation, action, defines how people relate relationships to activities. Cultures can be classified as oriented by doing or being. A “doing” culture is task-centered, stressing achievement and a “being” culture is relationship-centered rather than accomplishment-centered.

For the sixth variable, time, Hall (1976) , cited by Brake et al. (1995) states “Time talks, it speaks more plenty than words” (p. 50). If a culture is more oriented towards a single focus it implies that people concentrate on one task at a time and are highly committed to schedules. On the other hand, multi-focus cultures emphasize multiple tasks and relationships rather than deadlines. A manager who comes from a culture oriented towards a single focus probably cannot understand the behavior of a multi-focus peer who interrupts a business meeting more than once by concentrating on other tasks for a short amount of time (a phone call, for example, or someone calling the door to ask for instructions etc.). With time orientation, cultures can also be fixed or fluid. A fixed orientation is when punctuality is defined precisely and a fluid orientation is when punctuality is defined somewhat loosely. Latin American cultures are examples of the latter with a fluid sense of punctuality. Time can also refer to the vision of the past, present and future. Past orientation demonstrates a willingness for the continuation of traditions. Managers negotiating with traditional cultures in Asia, and who are not aware of the importance of old traditions in these societies, will not understand why a short term business opportunity will be rejected in favor of one more oriented towards long term results. People who are present oriented to the short term aim for quick results and those who are future oriented have a willingness to trade short-term gain for long-term results.

The seventh orientation, space, refers to the distinctions members from a culture make between public and private spaces. This includes the distance between individuals as well as the organization of work space. In a private, individual orientation the preference is for distance between individuals but in a public, group orientation the preference is for close proximity.

The eighth orientation, communication, in a culture can be classified in one of seven different orientations: high context, low context, direct, indirect, expressive, instrumental and formal. High context cultures are relationship-centered; trust is critical, communication of meanings is transmitted not just in words, but relies also on the tone of voice, body language or facial expression (including silence). Low context cultures are task-centered; exchange of facts and information is stressed and business tends to be impersonal. A high context person's perception of a low context person's directness can be interpreted as rude and for a low context person, a high person's form of communication can seem unclear. According to Hall (1976),cited by Fujimoto Y. et al (2007) "examples of low context cultures include German, Scandinavian, North American and English cultures" (p13).

With reference to high context cultures, "high context cultures tend to refer to collectivist group members, who value indirectness, politeness, ambiguity and group membership" (Fujimoto Y. et al., 2007, p. 13). "High context cultures include Eastern nationals s, such as Japanese, Chinese, Arab, and Greek societies" (Fujimoto et al., 2007, p. 13).

Direct communication in a culture reveals a preference for an explicit way of communication, including identification, diagnosis and conflict management. When a culture prefers indirect communication, this culture uses a mixture of conflict avoidance and third parties to handle conflict, preferring implicit communication. Much indirectness in communication is to save face, protect honor and avoid shame. Expressive communication stresses relationships, an emotive and impersonal communication style with a degree of

objectivity. In instrumental communication, the characteristic is unemotional and an impersonal communication style with a high degree of objectivity; the stress is on task achievement and accuracy rather than style. In formal communication, high emphasis is placed on following protocol and social customs; there also tends to be a stronger class or hierarchy consciousness and a respect for rules and procedures. For informal communication, a high value is placed on change; progress is perceived as being of higher value than custom and individuals want to be more direct than candid when communicating.

The ninth cultural orientation refers to patterns in competitiveness which could be competitive or cooperative. In a competitive orientation, emphasis is placed on assertiveness and material success is reinforced. In a cooperative orientation, stress is placed on the quality of life, interdependence and relationships. Hofstede's approach for competiveness focuses on the dimension of masculinity versus femininity; the IBM analysis revealed that women's values of modesty and nurturing differ from men's values which are very assertive and competitive. In masculine countries, women are more assertive and competitive (but still less so than the men).

In the tenth orientation, structure, members of a culture demonstrate to what extent they experience discomfort as a result of ambiguity and uncertainty. Order and flexibility are the principal values; when order is the dominant value there is a high need for predictability and rules, whether written and unwritten. Conflict is threatening when flexibility is dominant; cultures are more tolerant of unpredictable situations and unknown situations, people and ideas.

Finally, the eleventh cultural orientation refers to the thinking orientation which is composed of four different characterizations in a culture. Deductive reasoning cultures are based on theory and logic, emphasizing abstract thinking and reality of ideas, moral, values. French and Latin American thinking tend to be highly deductive, focusing on *why* rather than

what and *how* (Brake et al., 1995). Inductive oriented cultures are based on experience and experimentation with a goal of verification through empirical proof. In linear oriented cultures, preference is for analytical thinking which breaks problems into small chunks and emphasis is given to pragmatic results. In systemic cultures, thinking focuses on the big picture and the interrelationships between components.

3.3 Methods of Cultural Learning

According to Müller-Pelzer (2009), intercultural competence "cannot be taught, it requires first and foremost, experience" (p. 118). Such experience can be acquired during and after an intercultural encounter where "situations arise in which facts, programs, problems, physical phenomena, feelings, norms and values, converge" (p.118).

We argue that the acquisition of intercultural competence is a complex process which demands the presence of certain elements so that experimentation is possible, like the process or methods for learning physics in science. To attempt to teach intercultural competence without experience is unrealistic (Müller-Pelzer, 2009). Students should be shown how cultural norms and values influence the attitudes and behavior of individuals at work, and hence how various functions need to be "managed" in different cultures (Orpen, 2003).

Intercultural competence is comprised of levels or stages. A model to explain the four levels of cultural competence is proposed by Brake et al. (1995) (see Figure 21) . In the first level the goal is to develop receptivity to cross-cultural learning, to open attitudes. This is needed as preparation for level 2, self- awareness, where the learner is open to recognizing cultural differences and their own cultural orientations, to avoid stereotypes and an ethnocentric approach. This is how the learner is guided to identify self-awareness and other-awareness and to identify what their primary cultural orientations are and what common ground exists.

In level 3, the aim is to establish ground awareness in the learner, to provide resources and to build a practical knowledge base of cultural information. With a progression to level 4, the objective is to develop behaviors into functional skills to maximize cross-cultural effectiveness. According to Brake et al. (1995), by developing all four levels, the manager will build their sense of confidence into a more rewarding way of doing business.

A learner who is at level 3 is ready to interact with members of diverse cultural groups in order to complete their development of cultural competence. Teachers find this the appropriate time to introduce their students to the collaborative link project that is presented in this research. Because students are aware of cultural differences that could create conflict and are prepared to avoid them, this is the ideal time for experiencing what they have learnt by working and interacting in diverse teams using synchronous and asynchronous technologies.

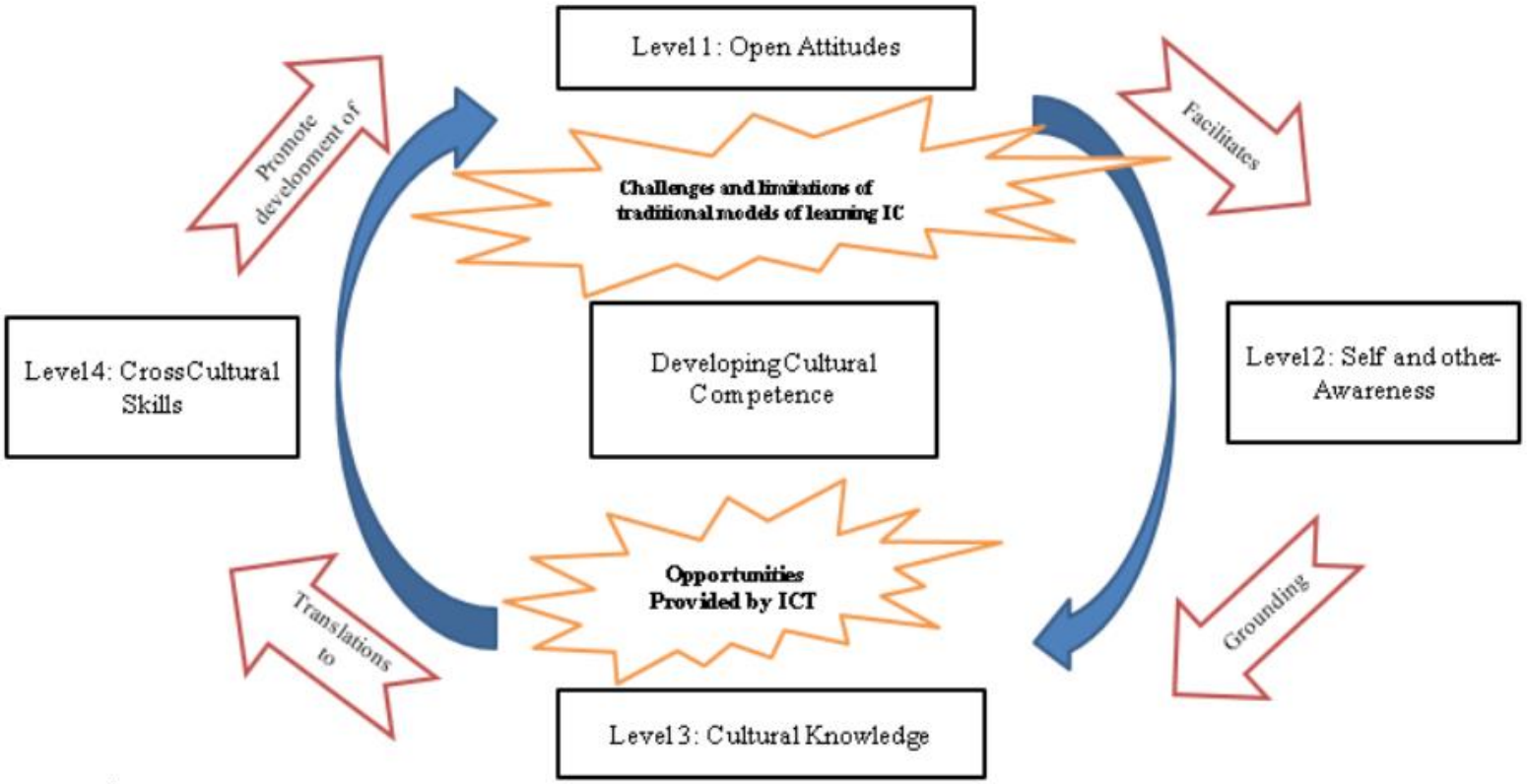


Figure 22. A model to explain four levels of cultural competence and challenges and opportunities identified in this research. Note: This figure is based on Brake et al. (1995).

The model of Brake et al. (1995) serves to clearly explain the starting point of intercultural competence acquisition, the developing receptivity to cross-cultural learning and the stages of IC process. However, our contribution is to identify the limitations of this model that arise from the fact that there are some "challenges" when developing the targeted attitude; the learning process should not rely on a subjective process, IC is an experiential phenomenon and should be contextualized. For this reason, we have reformulated and added the variables "challenge factor" and the "opportunity factor" to the original model. The challenge factor refers to the limitations of when the learning process cannot be an experience itself (for example, not having interaction with other cultures) and the opportunity factor is provided by other solutions—such as the resources that new communication technologies bring through communicating in virtual environments—to precisely facilitate the experience of interacting with other cultures in spite of geographical barriers. When it is only possible to do so with an ICT tool, rather than in person, such interaction is known as *face-to-face mediated technology*.

Both the social and cognitive dimension of intercultural competence need a starting point to be developed, constructed and implemented in training. The first level, or the awareness stage, occurs during encounters with members of other cultures and when the individual becomes conscious of their own personal or cultural characteristics. The next stage is an appreciation of or responsiveness to cultural differences in order to succeed during interactions.

What is missing from the existing studies of training students in intercultural competence is that the studies have not conducted research on what are the differences, challenges and attitudes of faculty experts and students (Blasco 2009) according different cultural backgrounds and with regards to the capabilities of the technology to facilitate training.

The approach of Laughton and Ottewill (2000) for acquiring IC is "to develop cultural awareness and cross-cultural business skills simultaneously" (p. 383). Their study presents a pedagogic strategy aimed at the facilitation of these skills for undergraduate business students. This strategy is based on Clack Worthy's notion of a cultural learning curve (Berger, 1996) which plots the development and attitudinal dimensions of cultural learning (see Figure 22).

The development of cultural learning will occur, according to Laughton and Ottewill (2000), in these stages that are illustrated in Figure 22. The ignorance/local expert is the entry-level skill, followed by the realization/tourist that corresponds to a recognition of strengths and weaknesses and skill gaps. The third stage is the understanding/curious sojourner, which implies a comprehension of nature and dimensions of skills development. The fourth stage is the synthesis/bicultural which refers to the achievement of skills-based capabilities. The fifth level is the selection/ integrator that combining skills and approaches to construct meta-capabilities. Finally, at the top of the curve, is the deftness/leader who negotiates tasks to allow utilization of meta-capabilities.

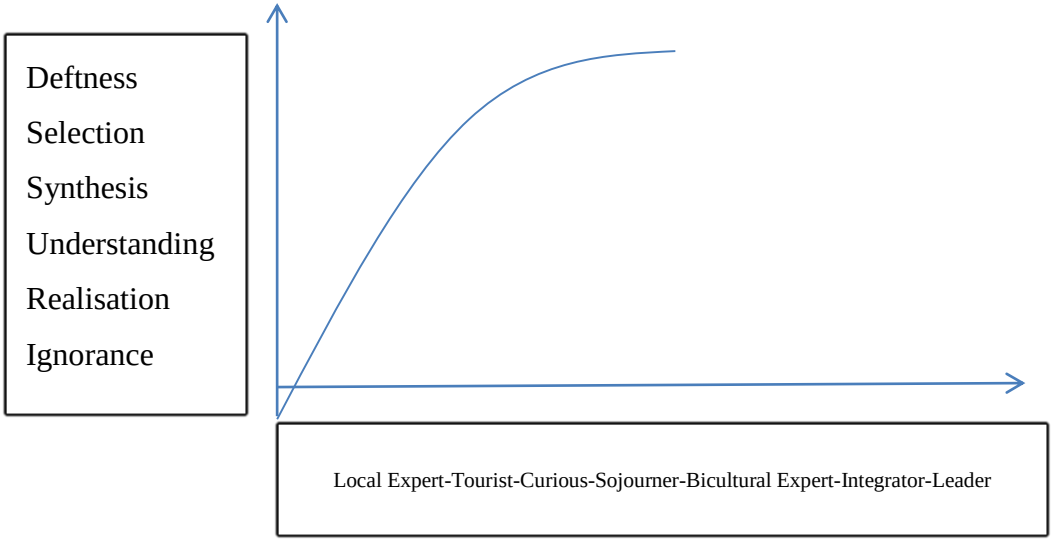


Figure 23. Stages of cultural learning mapped on to stages in skills development.
Note. This figure is based on Laughton and Ottewill (2000).

The accuracy of this study with respect to skill development and contextualization is essential; Laughton and Ottewill focus on the goal of forming competitive international managers and preparing students for placement. In addition, the positive aspect of this approach is to establish a path for planning the training in IC. Besides this, the study supports our state of contextualization; a virtual environment and face-to-face interaction using ICT among diverse cultural students group provide the context to simultaneously develop cultural awareness and cross-cultural business skills.

Another researcher who has reported about the development of cross-cultural capabilities, and the theory of intercultural competence acquisition and transfer is Brislin (1979) who proposes three methods of cross-cultural training: cognitive, affective and behavioral (see Figure 23). According to Waxin and Panaccio (2005):

> The cognitive method corresponds to a diffusion of information, using conferences or non-participative sessions on a foreign cultural environment. The affective method strives to provoke individual reactions so the subject can learn to deal with critical

cultural incidents. The behavioral method seeks to improve the participant's capacity to adapt his communication style to another culture, and to establish positive relationships with members of another culture. (p. 52)

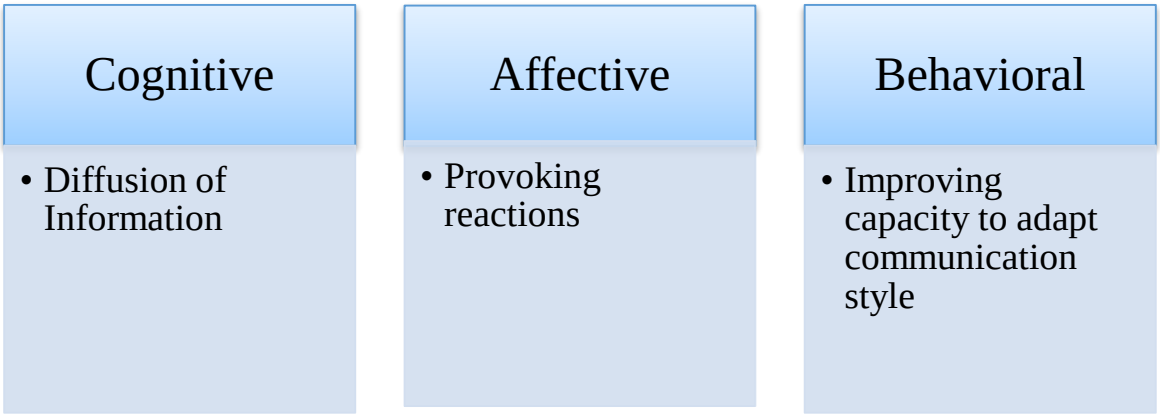


Figure 24. Three methods of cross-cultural training
Note: This figure is based on Brislin (1979).

This method, proposed by Brislin (1979), joins together the key factors for learning acquisition, sets the foundations and bases of the object to study and provides the environment and context to the subject to contrast the experience (further investigation on this matter is reported later). Landis and Brislin (1983) identified a number of fundamental cross-cultural training methodologies, focusing on the explanation of behavior from the perception of the native, cultural awareness training, cognitive behavior alteration; empirical learning and collaboration training.

Bloom (1956) identified, in a broader context, "the three domains within which all learning takes place: calling them cognitive, affective and psychomotor" (Bhaumik, 2012, p. 247). The mix of pedagogical approaches is generally used in management education to develop skills and attitudes in the students. The combination of methods includes: lectures, reading assignments, case studies and simulations that are traditionally delivered face-to-

face (Bhaumik, 2012). Yet this method can be improved by providing contextualization and adding other methods such as group discussions—where individuals work in team assignments—and role play. Role play can easily be developed through the use of ICT, providing student-student interaction regardless of the students' location. Bhaumik (2012) states that "ICT has a major role in the delivery of educational programs at a tertiary level and particularly in management education, ICT's actual use depends on the instructors' views of teaching and learning, and on actual workload satisfaction" (p. 245). In a review of studies on the impact of ICT on European schools, Balanskat, Blamire & Kefala (2006) showed that all the findings reviewed had recognized a range of important extensive benefits of ICT on learning, including the positive impact on students' motivation and skills, as well as independent learning and teamwork.

3.4 How to Select an Appropriate Pedagogy

Studies about education and pedagogy are vast in the literature, particularly on the selection of an appropriate pedagogy related to the field of study. In management sciences there are various pedagogical methods such as lectures, conferences, assignments, simulations, role plays, case method, videos, behavior modelling, individual and group projects (Bhaumik, 2012). In this research we contribute to the comprehension of a collaborative-models pedagogy using ICT in a multicultural environment.

Laughton &Ottewill (2000) stated that a "major challenge for educators in the business studies area is the development of an appropriate pedagogy to prepare students for the dynamics of their future vocational world in which the demands of international business are likely to dominate their experience" (p. 381). We argue that this is critical for emerging countries which are based on exports, such as Peru, where investing in human capital will positively impact on the development of international business and, consequently, on the

wealth of the society. They argued that “central to this notion of preparation for the world of international business is the facilitation of capability and effectiveness within the context of international operations and environment, and specially the ability to function in a cross-cultural or multicultural context” (p. 381). We ask, what is the best route to select an appropriate pedagogy? First, being clear about the nature of teaching methods is necessary; Laughton & Ottewill (2000) classified the methods as either factual, analytical and experiential (see Table 9). For the first level of cognitive engagment, factual teaching methods can be composed of lectures, books, videos, guest speakers, exercises. For the second level, analytical methods include classroom language training, case studies and international marketing. For the third level, experiential methods incude multicultural group, international work experience and self diagnosis of cultural traits.

As it is supported by theory and in order to get the highest level of cognitive engagement for training the students in IC (Laughton & Ottewill, 2000), we establish our link class using this three teaching methods, factual, analytical an experiential without leaving the campus, using synchronic and asynchronous and multicultural interaction.

The modern theory of experiential learning was developed in the early seventies by an American educational theorist David Kolb who proposed that new knowledge, skills, or attitudes are achieved through confrontation among four modes of experiential learning. These four models are concrete experience abilities (CE), reflective observation abilities (RO), abstract conceptualization abilities (AC) and active experimentation (AE).

Kolb (1984) argued that the learner must be willing to be actively involved in the experience which involves the observation of and reflection on that experience and a formation of abstract concepts based upon that reflection. The learner must possess and use analytical skills to test the new concepts, in addition to which, they should possess decision-

making and problem-solving skills so that they can use the new concepts gained from the experience.

Table 9. Training Methods in Relation to Training Rigor

Cognitive engagement		Nature of teaching methods	Examples of teaching methods
Level Low	**1**	Factual	Lectures, books, videos, guest speakers, comparative exercises, research exercises
Level Medium	**2**	Analytical	Classroom language training, case studies, interactive CD-ROM, projects, e.g. international marketing
Level High	**3**	Experimental	Multicultural group work, self-diagnosis of cultural traits, role plays, simulations, international work experience, personal development portfolios

Note. This table is based on Stewart-Black and Mendenhall (1991) adapted in Laughton and Ottewill (2000, p.385)

According to Alavi (1994), in synchronous communication classrooms using groupware, students collaborating with the technology will acquire different level of skills development, learning and interest compared to students collaborating in a classroom without electronic support. The study of virtual collaboration between cultures will benefit the productivity in international labor environments and cross-culturally distributed teams (Rutkowski. A et.al, 2002).

With regard to the impact of cultural environment on the utilization of information technology, Johns, Smith and Strand (2003) developed a research model within an organization and tested the hypothesis that cultures with weak uncertainty avoidance are more willing to try new technology, even at the risk of disappointment, than societies with solid uncertainty avoidance that are more likely to struggle with the execution and integration of new technology (see Figure 24).

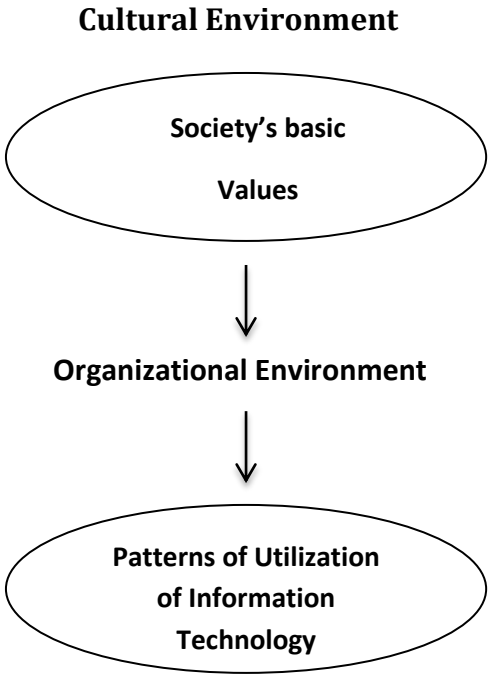


Figure 25. The impact of the cultural environment on the utilization of IT.
Note. This figure is based on Johns, Smith and Strand (2003, p. 91).

As we reported in the first chapter, this dissertation will not focus on analyzing the influences or causalities of cultural differences in technology acceptance. Instead, we include different nationalities in the study of faculty experts and students to eliminate bias and in order to understand if intercultural awareness and intercultural competence can be acquired through technology.

Assessment scales

Various researchers in the field agree that intercultural competence can be assessed. Deardorff (2004) says that some tools have been developed to assess this competence in different scenarios, such as in the work place, overseas assignments, readiness for international work, learning strategies, and for students living abroad. Fantini (2006) states that the starting point for assessment is not with methods or tools but rather in defining what

is measured and ensuring that the goals are aligned with the goal of the course, program or organization. Appendix G describes eleven assessment tools according to Fantini (2006).

This thesis does not focus on assessing IC, but on identifying whether the intercultural awareness basis for intercultural competence acquisition is obtained in students after participating in a collaborative learning class.

3.5 The Collaborative Model of Learning using Synchronous Information Communication Technology

ICT theory is presented in this chapter in order to understand the incorporation utility of the collaborative method of learning as analyzed in this study. For a comprehensive explanation of the conceptualization of the learning models, Leidner & Jarvenpaa's study (1995) presents in detail the traditional and non-traditional models: objectivism, constructivism, collaborativism, cognitive information processing and socioculturism under the lens and assumptions of an electronic classroom.

This differentiation allowed us to classify the class model in this dissertation as a collaborative or cooperative model of learning where, rather than being transmitted, knowledge is created or constructed by each learner (Leidner & Jarvenpaa, 1995). In the collaborative model, the main goal is to construct a shared understanding through interaction with other individuals (more shared, more learned), and the implicit goal to improve communication and social understanding in an international environment. The link class project, conducted by myself, is composed of young students with little or no experience of living abroad, where conditions for a collaborative model of learning are created with the facilitation of VC, a synchronic ICT tool for real time interaction. According to Leidner & Kayworth (2006), the technologies that allow control of the content and space of learning are most appropriate to use in a constructive or collaborative environment.

3.6 Theories about the Impact of Media Types in Communication Activities

Newberry (2001) argued that the use of different media types has different effects on the way that individuals perceive each other as they communicate. When new activities are being designed, or new tools are used in classroom, the potential effects should be well understood.

A knowledge of the impact different media types have on the message and the perception of the individuals who will use it is important to the instructor as they select which communication technologies to use in their classroom. There are several theories that can help in understanding this process (see Table 10), although one gap in the literature is the lack of comparison as to which ICT theory can best support a collaborative class. Each of these theories are defined below with a description of how they have been incorporated into this research.

Table 10. Theories about the Impact of Media Types in Communication Activities and Utilization in this Research

1) TAM Technology Acceptance Model	**2) SPT Social Presence Theory**	**3) CHEX Channel Expansion**	**4) MRT Media Richness Theory**	**5) MST Media SynchronicityTheory**
Shultz and Slevin (1975) Davis (1989)	Biocca et al. (1992) Biocca and Harms (2002)1/. Gefen D. & Straub D. (2004)2/.	Carlson (1995) Carlson and Zmud (1999)	Trevino and Lengel (1987) Sitkin et al. (1992) Carlson and Zmud (1999)	Dennis, Fuller and Vallacich (2008)
User acceptance constructs: Perceived usefulness Utility Perceived ease of use	1/. SP Is the sense of being with others in a mediated environment. SPT is how technology affects social cognition. 2/. Medium users assess the degree of social presence required by the task.	Identifies experiences as important in shaping richness perceptions with The channel The messaging topic The organizational context The communication participants	MRT is the ability of a medium to carry information	Roles of the media in the communication process: Immediacy of feedback Symbolism Parallelism Rehearsability Reprocessability Communication performance is better: For conveyance/ Exchange of information: Lower synchronicity. For convergence// Development of a shared meaning to information: Higher synchronicity
Study 1 To know faculty experts 'acceptance construct Q3, Q4 Study 2 Part II Q1, Q2. Study 3 To know managers' acceptance construct Part 7 (G) 7.1, 7.2	Study 1 To measure social communication Q8,Q9,Q10 Study 2 Part III. Q3…Q14 Study 3 Part 7 (G) 7.1	Study 1 Study 2 Part III, Q 21 to Q26. Study 3 N.A	Study 1 Study 2 Part III Q 15 to Q20 Study 3	Study 1: To know faculty experts' opinion of the role of media Q2, Q3, Q4, Q6, Q7 Study 2: Part IV. Q4. Study 3: To know managers' opinion on the role of ICT in learning IC Part 7 (G). 7.3

Note. This table is a personal compilation taking into account papers from Newberry (2001), Dennis et al. (2008) and Gefen and Straub (2004).

3.6.1 Technology acceptance model (TAM)

The practical value of the development of this theory relies on the importance of assessing user demand and offering information technology products and services through user acceptance constructs. One theoretical determinant of user acceptance of information technology (Davis, Bagozzi, & Warshaw, 1989; Schultz & Slevin, 1975) is the perceived usefulness of information technology, referring to the degree to which a person believes that using a particular system will help them perform their job better. Some technologies are more highly classified depending on the perception of their usefulness. In the collaborative class study, faculty experts were asked in the survey about their opinion of different media to support their job and help students' acquisition of intercultural awareness and IC (Study 1, Chapter 5). Another acceptance construct is the perceived ease of use of information technology, the degree to which a person believes that using a particular system would be free from effort. Students are assessed on this acceptance construct in the survey when asked about their perception of IT whilst participating in the link class project (Study 2, Chapter 5). The study by Davis et al. (1989) found that there is a prominence of usefulness over ease of use, meaning that perceived usefulness is a strong correlator of user acceptance.

Rutkowski, Vogel, van Genuchten and Saunders's study (2008) presented the results of ten years' experience of communication in virtual teams through describing the Hong Kong-Netherlands project (HKNet), where over 1000 students have participated in a 10,000 hour project. This integrated-learning activity is an educational learning approach which brings together the reality of engineering management with professional communication in an educational context. For this subject, different teams need to produce a web site that discusses their topic from the multicultural perspective of the students' location in Europe, Asia and America. The experience was analyzed to study the use of ICT in a complex task

environment; the study reported that "research has demonstrated that ICT can efficiently support distributed teamwork when the critical aspects of social process are taken into account" (p. 305). The findings were congruent with the literature as "the students learn about the importance of task-technology fit" (p. 306). The implications for the curricula are that this kind of activity is not a simple task as difficulties for team-work arise due to working across different time zones and with different cultures.

The utilization of ICT for learning purposes should also be analyzed under the access and use of the internet and other online media for the purposes of retrieving (e.g., web searches) or sharing information (e.g., email, chat, VC) (St Amant, 2007). Bandwidths or the speed with which individuals can access online information can affect the continuing transmission signal for a VC or chat connection and instructors need to create strategies for overcoming these challenges. St Amant (2007) proposed a series of strategies to consider in the case of an international web-based course to design web pages. The proposed strategies focused on the level of access, design, scheduling and language.

3.6.2 Social presence technologies and social presence theory

Social presence is the sense of being with others (Biocca & Nowak, 2001). Social presence technologies are the technologies that are primarily intended to increase real time social interaction and social presence theory considers how technology might affect, distort and enhance certain aspects of social cognition (Biocca & Harms, 2002).

The phenomena of social interaction between individuals can be classified into various types: when people are not physically or immediately present or when it is perceived by our senses via email, film, teleconferencing, and other media technologies. The levels of social presence can be experienced as a function of the properties of the medium, the nature of the interaction and individual differences (Biocca & Harms, 2002). See Figure 25.

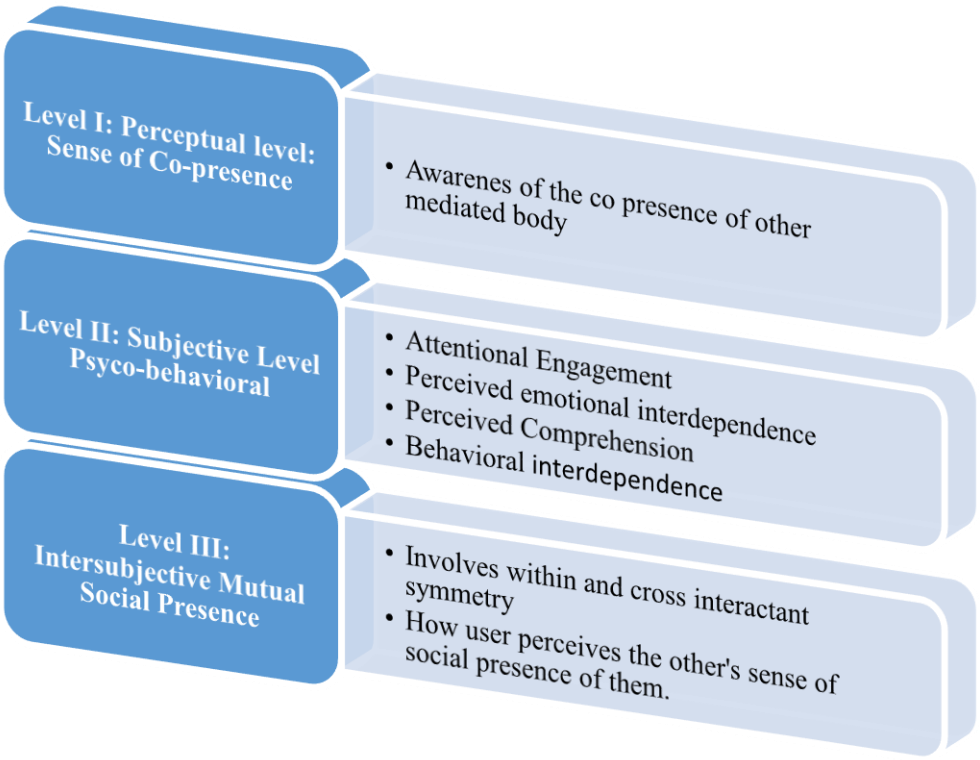


Figure 26. Levels and dimension of social presence
Note. This figure is based on Biocca and Harms (2002).

The first level is the level of awareness of the co-presence of another human being or intelligence as defined by Heeter (1992). Biocca and Nowak (2001) defined the social presence as the sense of being with another in a mediated environment, as a sense of accessibility. Social presence theory provides support for analyzing the link class project when considering how students' social interactions are performed in the mediated environment (Study 2, Chapter 5). In face-to-face encounters, individuals interact without mediation; when interaction is through mediated technologies, relationships can be maintained and even developed (Biocca & Harms, 2002) (see Figure 25). Social presence theory provides a general tool to measure social communication. Faculty experts were asked in the survey how relationships are established and if the students adapted their behavior

during the link class project. They were also asked if they experienced any influence of western culture during the link class project or if the personality of students and/or national differences influenced the learning process (Study 1, Chapter 5).

Gefen and Straub (2004) described social presence theory as how social context has a response to medium use, which is an important characteristic of trust:

> Social presence theory argues that medium users assess the degree of social presence required by the task and fit it to the social presence of the medium; that is, how much a medium enables a communicator to experience communication partners as being psychologically present. (p. 410) See Figure 26.

Figure 27. Face-to-face mediated interaction

3.6.3 Channel expansion theory

Carlson and Zmud (1994) focused their research on the development of perceptions concerning a given channel. They stated that understanding how individuals develop perceptions about a channel is an important component of understanding the selection process. Channel experience has previously been measured in terms of the length of time a channel has been used or the number of messages sent. However, such an operational

definition reflects channel use as opposed to knowledge-building experience. In channel expansion theory, channel use is seen as a necessary but insufficient basis for acquiring knowledge-building experiences.

It is the nature of a subject as user, and the knowledge bases developed through them, that ultimately determine richness perceptions (Carlson & Zmud, 1994). According to Carlson and Zmud (1994), channel expansion theory provides explanations for these inconsistencies. Channel expansion theory identifies certain experiences as important in shaping how an individual develops richness perceptions for a given channel (Carlson & Zmud, 1994; Carlson, 1995). Four experiences are identified as being particularly relevant: experience with the channel, experience with the messaging topic, experience with the organizational context, and experience with communication co-participants. In our research, students were asked in the survey about their experiences in the link class project with the channel (VC), with messaging topic (tailored messages) with the organizational context (multicultural context), and with communication with co-participants (teammates co-participants) (Study 2).

As communication participants acquire relevant experience in each of these domains, they develop associated knowledge bases that may be used more effectively in both encoding and decoding rich messages on a channel and perceive the channel as becoming increasingly rich. Carlson and Zmud (1999) proposed that each of these knowledge bases, if developed, will enhance the ability to communicate effectively.

3.6.4 Media richness theory

Media richness theory (Carlson & Zmud, 1999) refers to channels' relative abilities to convey messages that communicate rich information. According to the theory proposed, the communication of messages should be through channels with enough suitable media

richness capacities. Media richness theory has mostly been supported when tested on so-called “traditional media”, such as face-to- face communication, telephone, letters and memos (Lengel & Daft, 1988; Russ, Daft, & Lengel, 1990). However, inconsistent empirical findings have being caused by the introduction of so-called “new media”, like email and voicemail.

As Newberry (2001) explained, an understanding of media richness theory is useful when examining the impact that different communication media types potentially have on the message (see Table 11). Media richness theory comes primarily from the literature on computer-mediated communications (CMC) and is most often associated with business communication. In this context, media richness theory is used to analyze communication media choices and to help reduce the ambiguity of communication through the appropriate selection of communication media.

Media richness is explained by some other researchers as the ability of a medium to carry information (Trevino, Lengel, & Daft, 1987). Two components of a medium's ability to carry information can be identified (Sitkin, Sutcliffe, & Barrios-Choplin, 1992). These two components are the data-carrying capacity and the symbol-carrying capacity. Data carrying capacity refers to the medium's ability to transmit information while symbol carrying capacity refers to the medium's ability to carry information about the individuals who are communicating.

Researchers who work with media richness theory often rank communication media on their abilities to carry both information types (especially the second type, symbolic information). The criteria for ranking a medium's ability to carry information can be based on the ability of the media to relay immediate feedback (see figure 27), provide feedback cues such as body language (which allows the message to be created or altered specifically

for an intended recipient), and transmit the feelings or emotions of the communicators (Daft & Lengel, 1984). In discussing communication in online classes, Newberry (2001) built on the work of these researchers to construct the following table which attempts to place seven different types of communications media in a three-position matrix (high, medium, and low), expressing the media's performance or its ability to carry: feedback, multiple cues such as body language, message tailoring, and emotions.

Table 11. Relative Richness of Different Media Types According to Four Criteria

	Media rating		
Criteria	High	Medium	Low
Feedback	Face-to-face Video Conferencing Synchronous audio Text-based chat		E-mail Threaded discussion Asynchronous audio
Multiple cues	Face-to-face	Videoconferencing	Synchronous audio Asynchronous audio Text-based chat E-mail Threaded discussion
Message Tailoring	Face-to-face	Videoconferencing Synchronous audio E-mail	Text-based chat Asynchronous audio Threaded discussion
Emotions	Face-to-face	Videoconferencing Synchronous audio Asynchronous audio	Text-based chat E-mail Threaded discussion

Note. This table is based on (Dennis & Valacich, 1999).

Dennis and Valacich (1999) ranked different media types into a hierarchy from richest (face-to-face VC) to weakest media (asynchronous audio). Rich media is the media which carries the most information; lean media carries the least information.

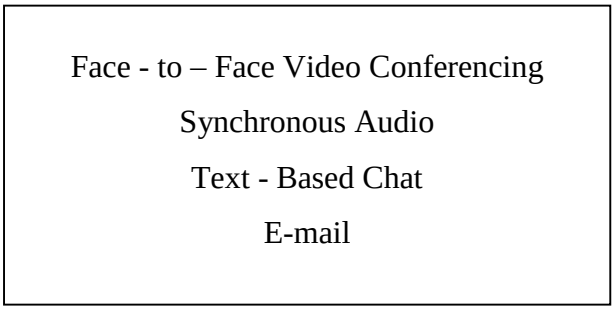


Figure 28. Hierarchy of media richness

Note. This figure is based on Newberry (2001).

In educational activities, the choice of media can be influenced by many factors, some of which include: technology availability, time constraints, familiarity with the technology, and task appropriateness of the technology and desired outcomes of the learning activity.

3.6.5 Media synchronicity theory

Media synchronicity theory (Dennis et al., 2008) explains the five characteristics of the media that play a role during communication processes. Firstly, the immediacy of feedback refers to the speed at which a medium can deliver a message (Study 2). Secondly, the symbol variety or "height" of the medium, for the ability or inability to transmit certain physical visual and verbal symbols, such as facial expressions and gestures (Study 2). Thirdly, the parallelism or "width" of the medium refers to how many simultaneous conversations can be held (parallelism is possible using email but is not incorporated in Study 2 as VC cannot permit simultaneous conversations). Fourth, the rehearsability or the extent of editability, i.e. the possibility of carefully crafting a message before transmission to ensure that the intended meaning is expressed precisely (Study 2). Fifth, the reprocessability, referring to

the ability to reexamine or process a message again during decoding, either within the context of the communication event or after the event has passed (Study 2).

These five characteristics have different scores in all dimensions, for that reason it is important to look at which characteristics are required for a specific task. Dennis et al. (2008) differentiate between the conveyance and convergence of media capabilities in the communication process. Conveyance is the exchange of information; it can be divergent if not all of the participants agree on the meaning of the information. "Convergence is the development of a shared meaning for information, by definition all participants must work together to establish the same meaning for each piece of information" (p. 5). For conveyance processes, the use of media supporting lower synchronicity should result in better communication performance. But for convergence processes, the higher synchronicity supported by use of media may result in an improved communication performance.

The five capabilities of media described in the theory influence the development of synchronicity and thus the successful performance of conveyance and convergence communication processes. VC has been identified as a media supporting higher synchronicity; it represents an adequate environment in the link class project, allowing students to experience the reality of intercultural interactivity due to the immediate feedback and the ability to transmit symbols. Nevertheless, it is complemented by conveyance processes to complete outside the class assignments in teams and here students are able to use other media such as chat and email.

In this respect, the method of the link class is characterized as a *blended* method of learning. The method integrates face-to-face learning experiences mediated by VC with asynchronous mediums, such as chat and email. Blended learning offers possibilities to create transformative environments as argued by Garrison and Kanuka (2004), whose

research addressed administrative and leadership issues and presented an outline to implement blended learning approaches in higher education, emphasizing the property of written communication within internet communication.

> Under certain circumstances, writing can be a highly effective form of communication that encourages reflection and precision of expression. When thoughtfully integrated with the rich dynamic of fast-paced, spontaneous verbal communication in a face-to-face learning environment, the educational possibilities are multiplied. (Garrison & Kanuka, 2004, p. 97)

Garrison and Kanuka (2004) added that a sense of community is needed to sustain the educational experience and that it is necessary to rethink and redesign the teaching and learning relationship.

3.7 ICT, Culture and Virtual Teams

The impact of media types in communication activities used in social and educational training or a work environment will be influenced by culture. According to Cooper (1994), different cultures require different kinds of information and will process them differently. Consequently, IT implementation in organizations will play a role in the degree of user satisfaction.

As a result of the social uses of new ICT, culture and knowledge are experiencing a transformation of paradigms. This transformation has been called a scientific and technological revolution by Velarde, Bernerte & Franco (2015).

Cross-country technology adoption can differ not only because of economic conditions, but also because of the prevailing social conditions or national culture (Erumban,

& de Jong, 2006). This study provided empirical investigation into the relationship between cultural factors and the ICT adoption decisions across countries and suggests that, in some countries, cultural differences can act as an inhibitor to ICT adoption.

ICT adoption across countries is attributed to economic factors such as price declines, human capital, and the openness to trade. In this respect differences exist, even across countries with similar income levels such as in the European Union where ICT proliferation has been slower than in the US. These conditions, according to Erumban & De Jong (2006), serve to suggest that national culture is another variable. These variables are represented by the attitudes of the people in an organization or country and by the adoption decision process. Based on Hofstede's model, cultures with a high degree of power distance are expected to show a lower rate of ICT adoption, due to being less open to new ideas, as well as reduced autonomy and less empowerment because of the highly authoritative leadership style in these cultures. Another dimension in the Hofstede model is uncertainty avoidance. Countries where this dimension scores highly are more risk-averse, do not approve of making changes, and consequently show a lower rate of ICT adoption. The hypotheses in the study by Erumban and de Jong (2006) were supported and are the most significant cultural factors by which ICT adoption can be explained.

With regard to ICT adoption, no conclusive results were obtained in the study for the dimension of individualism which concerns the relation between the individual and the group.

Finally, Erumban & De Jong's results (2006) were not conclusive or satisfactory for their hypothesis which suggested that countries with high masculinity scores show a higher rate of ICT adoption. High masculinity means greater competition and material values (characteristics of innovative organizations). In the same way, less-than-satisfactory results

were found for the hypothesis that countries with a low score of long-term orientation value (that attribute less importance to traditions and show more openness to new ideas and take risks) show a higher rate of ICT adoption. Given these results, we propose a need for further research.

Another study (Wan Lee , Becker, & Nobre, 2012) focused on the investigation of the effects of national culture on technology acceptance. This investigation studied the effects of online interaction in management classes between USA and Korea. The study reported that high-context and collectivist cultures are not so willing to adopt online management education and, in addition, there are differences in the adoption likelihood of learning.

The majority of management training programs and online learning systems, according to Wan Lee et al. (2012), have been developed in western countries. Consequently course design, delivery, and underlying technology will have different influences on one culture or another; those delivering management material need to adapt the technology delivery system as well as the structure of the delivery in order to maximize learning results. The findings of Chen, Hsu & Caropreso (2006), in a study of the differences between students from USA and Taiwan in a collaborative online learning experience, reported more positive than negative aspects in the experiences of both countries. The Taiwanese students, however, made more explicit responses such as acquiring more technological skills, learning a different educational system, and as the least valuable, the need to spend time in preparation for discussions and pressure.

With a different approach, Fujimoto et al. (2007) presented the explanation of the paradoxical effect of cultural diversity online. Their explanation was based on two contradictory theories, that technological progress causes cultural homogeneity (Hillis-

Miller, 2001) and that technological progress reinforces cultural fault-lines (Hall, 1996; Zahir, Dobing, & Hunter, 2002). According to the theory of convergence or homogeneity, people fear that technology causes a uniformization of ways of dressing, speaking, behaving and working. In the case of the theory of fault-lines, hypothetical dividing lines are identified among subgroups within a workforce based on similarities in one or more attribute (Fujimoto et al., 2007). The internet is an example of a technology medium that can be adopted differently by different group contexts. An example of this can be illustrated in the case of Peru with mobile apps. Mobile apps are computer programs which are designed for mobile devices such as smartphones and tablet computers. A popular app in developed countries is used for booking cabs; in Peru this idea has been adapted with an app that can book a moto-taxi, a common method of transportation in some towns in Peru and some districts in Lima. As a motorcycle that has been adapted with the addition of a covered cabin that can seat up to three passengers, a motto-taxi is itself another example of adapted technology.

In terms of online communication, individualism and collectivism are expected to permeate in the use of email. Messages tend to be short and direct in low context cultures and more stressed and emotional in high context cultures where communicating in person is preferred (Fujimoto et al., 2007).

The study carried out by Gong et al. (2007) investigated the cultural impact of internet access and usage. Their findings report that internet adoption increases as power distance decreases.

UNESCO (2011) state that:

> ICTs do not have to privilege one culture over another, Educators almost universally use the book as a tool, adapting it to the needs of particular cultures. We also need to

> use ICTs universally in education, without adopting the economic and cultural assumptions that have driven their rapid globalization. (p. 63)

Different types of ICT use are inherent in virtual teams (Richards & Bilgin, 2012). Virtual teams are very popular in multinational companies for accomplishing organizational goals, resolving problems and developing software projects. Effectiveness is increased by the increases in telecommunication bandwidth and advances in collaborative technologies such as groupware (Saunders, Van Slyke, & Vogel, 2004).

Popular tools used by virtual teams and the selection of such tools will depend on: the immediacy of feedback; whether or not synchronicity is required in a particular task; and the particular advantages of the tool. A classification of ICT tools in terms of uses and advantages has been formulated by Ebrahim, Ahmed &Taha (2009). Instant messaging and chat serve for instant interaction (but are less intrusive than a phone call) and imply low set-up efforts and cost. Some examples of instant messaging are Yahoo Messenger, MSN Messenger (Microsoft Network), AOL Messenger (America On Line), EIM (Enterprise Instant Messaging) and Skype.

Groupware and share services are the most popular when the use of the tool must be asynchronous and involves handling contact lists, calendars, arranging meetings. Although the cost and setup efforts vary, some of the most popular are Lotus Notes, Microsoft Exchange, and Novell GroupWise.

When immediate feedback is required, a synchronic tool for virtual teams is provided by remote access and control, such as NetMeeting, WebEx, Remote Desktop, and PCAnywhere. Through this system the user controls a PC without being onsite but the cost and set up varies. Another synchronic tool is web-conferencing; products offered in this market are Net Meeting, WebEx, Meeting Space, and GoToMeeting. Although effort is

required during initial set-up, the main advantages of web-conferencing are: live audio, dynamic video, whiteboard, application sharing and moderate costs. File Transfer is another asynchronous tool where the main advantage is sharing files of any type. The cost of this varies and there is a moderate setup effort but file transfer can be accessed through collaborative web sites (intranets). One of the most used tools is email although numerous vendors and free applications are available. Finally, the telephone is considered another tool for virtual teams with a low setup effort and varying costs; it can be applied as a synchronous or asynchronous tool through direct calls, conference calls, or voice mail. Further investigation should be developed about the use of modern mobile phones, such as smartphones, and their implications in global virtual teams. Communication and internet usage have evolved together, suggesting broader communication patterns and practices. Ballard & Ramgolam (2011) have studied the phenomenon of spatio-temporality, the study of time and space, in organizational practices and highlight the constant use of the smartphone and its applications as a substitute for operating or opening hours in the traditional work place.

Similarly, another field for in-depth study on the recent implications of technologies in organizational and educational environments is the influence of technology tools offered by Web 2.0 sites that offer users interaction and collaboration (in contrast to web sites where people are just passive readers and viewers). Web 2.0 platforms are the origins of social networking sites such Facebook (one of the most popular social networks), or for blogs, wikis, video-sharing sites (You Tube), picture-sharing sites (Instagram) and web applications that provide instant messaging abilities such as Twitter. These media are also being used by marketing managers as an essential communication tool (M. Thomas & H. Thomas, 2012).

The implications of using different technology tools joined with the characteristics of global teams have an impact upon workplace culture (Richards & Bilgin, 2012). Such characteristics of global teams include: the localization in different geographical zones; different cultural values, attitudes and behaviors; performance orientation; competitiveness; social responsibility; stability; and educational and professional standards. Particular attention was given to virtual teams and vision with regard to time in Saunders, Van Slyke, and Vogel's study (2004). This study explained in detail how time is shaped differently by each society and each organization. The performance of a global virtual team is affected by the time vision and impact in the scheduling of times and synchronizing time. Examples of time visions are clock, (the view of time as scarce commodity, particular to Anglo-Saxon, German and Scandinavian cultures), event (the view of time as cyclical with well-defined beginnings and endings, common in Japanese culture), timeless (a view that is cyclical, particular in Hinduism and Buddhism where both life and time go in a circle) and harmonic (where time is very concrete, common in Confucianism and Taoism. In China, time is monochromic and each second has a value so punctuality is considered very important).

Deadlines in virtual teams are affected by the dominant time vision. Clock time vision is characterized by the completion of a series of activities along a timeline, meeting the deadline synchronizing activities. In polychromic cultures, the ability to handle multiple tasks at one time affects deadlines and can create conflict.

An experience of an educational technology project in a multicultural virtual environment can be found at HKNET (van Genuchten, Vogel, Rutkowski, & Saunders, 2008), a joint project between universities in Europe, Asia and North America that brings information systems reality into educational contexts. "Students do not just learn the theory of working in virtual teams, but actually experience working together on a project related to

an emerging trend" (p. 366). A series of relevant issues emerge: culture is shown as more malleable and subject to contextual variations, "students from widely varying cultures adapt and find a way to work together to solve the problems at hand. Time pressure and technological deficiencies can, however, hinder the rate of cultural convergence" (van Genuchten et al., 2008, p. 366).

Not just the use of ICT, but also the role of social and digital media, and even disruptive innovations in higher education should be reviewed by educational managers and educators, in order to be incorporated into their learning and teaching methods.

Current students and millennials (a new global generation that have what we can call "tech-brain mindset") will soon be part of the higher education population and will demand a different kind of education. Resistance to the adoption of new technology, as reported in business schools by professors and deans (M. Thomas & H. Thomas, 2012), is another case of inertia to change and a mechanism to support traditional face-to-face learning. Thomas and Thomas posed a strategic question to educational managers and decision makers to determine the appropriate balance and potential transformation in terms of teaching models, as well as the need to provide faculty members with intensive training. We would also add here, in conclusion, that cultural context should not be forgotten when taking into account which sustainable methods will be of equal benefit to all students.

CHAPTER 4: CONCEPTUAL FRAMEWORK TO UNDERSTAND TECHNOLOGY SUPPORTED MULTICULTURAL LEARNING

4.1 Conceptual Model

Our conceptual model supports the primary aim of this study which is to understand how a technology-mediated multicultural experiential learning can support students' acquisition of IC. The model is built upon previous work by Brake (1995), Brislin (1979), and supported on the theories that explain the impact of media types in communication activities and the way individuals perceive each other as they communicate (see table 10), Newberry (2001), Davis et al (1989), Gefen & Straub (2004), Carlson and Zmud (1999) and Dennis et al (2008).

In this research we identified the challenges and limitations of a traditional model of learning IC, and the opportunities provided by ICT. The limitations and opportunities have not been discussed in the model of Brake (1995) when he explains how to develop cultural competence.

In this thesis, our model explains how ICT can support multicultural learning and an IC outcome. IC is the result of a process where the methods for cross cultural training are supported by ICT (see Figure 28).

ICT capabilities to support IC training are outlined by TAM, Davis et al (1989) to know users of media acceptance. By SPT, Gefen & Straub (2004) to know how users of media asses the degree of social presence (sense of being with others) required by the task, by MRT, Carlson & Zmud, to know users' assessment of the media to carry information, and by MST , Dennis et al. (2008) to know how users of media asses communication performance according lower or higher synchronicity requested by the task.

Model Dimensions

There are two dimensions in this model, one is the process, and the other the influences from the boundaries in the model. The process in the model is constituted by means of a link class, composed by the elements and actions participant together to develop IC outcome. The boundaries in the model are the forces of globalization and trends of internationalization in educational management (Orpen, 2003; Bush, 2006; Knight, 2008) that affect the current scenario of higher education. This scenario of higher education demands and forces students to acquire specific competences to be competitive in a globalized labor market (Adler & Bartholomew, 1992; Laughton & Ottewill, 2000). Cultural orientation influences this scenario through different behavioral tendencies that characterize each specific culture of groups (faculty, students and managers) affecting communication, and patterns of utilization of information technology (Johns et al., 2003)

Independent Variable: The collaborative method of the link class

This is characterized by cross-cultural training elements, as pointed out by Brislin (1979), the acquisition of intercultural competence requires the presence of three elements: cognitive, affective and behavioral. These elements are each present in the link class method. The first element, cognitive, is produced when faculty experts in their local class diffuse information about the conceptualization of culture and its implications in international management. The second element, affective, is facilitated by technology when communication and interaction between partners is mediated by the transmission of real-time audio and video. The affective element is also present through the interaction with other technology media outside of the class (chat, email); when a reaction is provoked in the students there is an affective and an experiential dimension in the process. Student's adaptation in the style of communication indicates the behavioral element.

Independent Variable, ICT

ICT Variable includes all capabilities for interaction. ICT offers a feasible implementation of the method due to its capabilities to recreate face-to-face environments which are similar to an interaction between people who are in the same location (Carlson & Zmud, 1999; Rutkowski et al., 2002; Dennis et al., 2008; Bhaumik, 2012).

In addition to these components, there is the required experiential factor needed for training in intercultural competence (Kolb, 1984; Müller-Pelzer`, 2009; Gröhske & Bolten, 2012) that is influenced by cultural patterns.

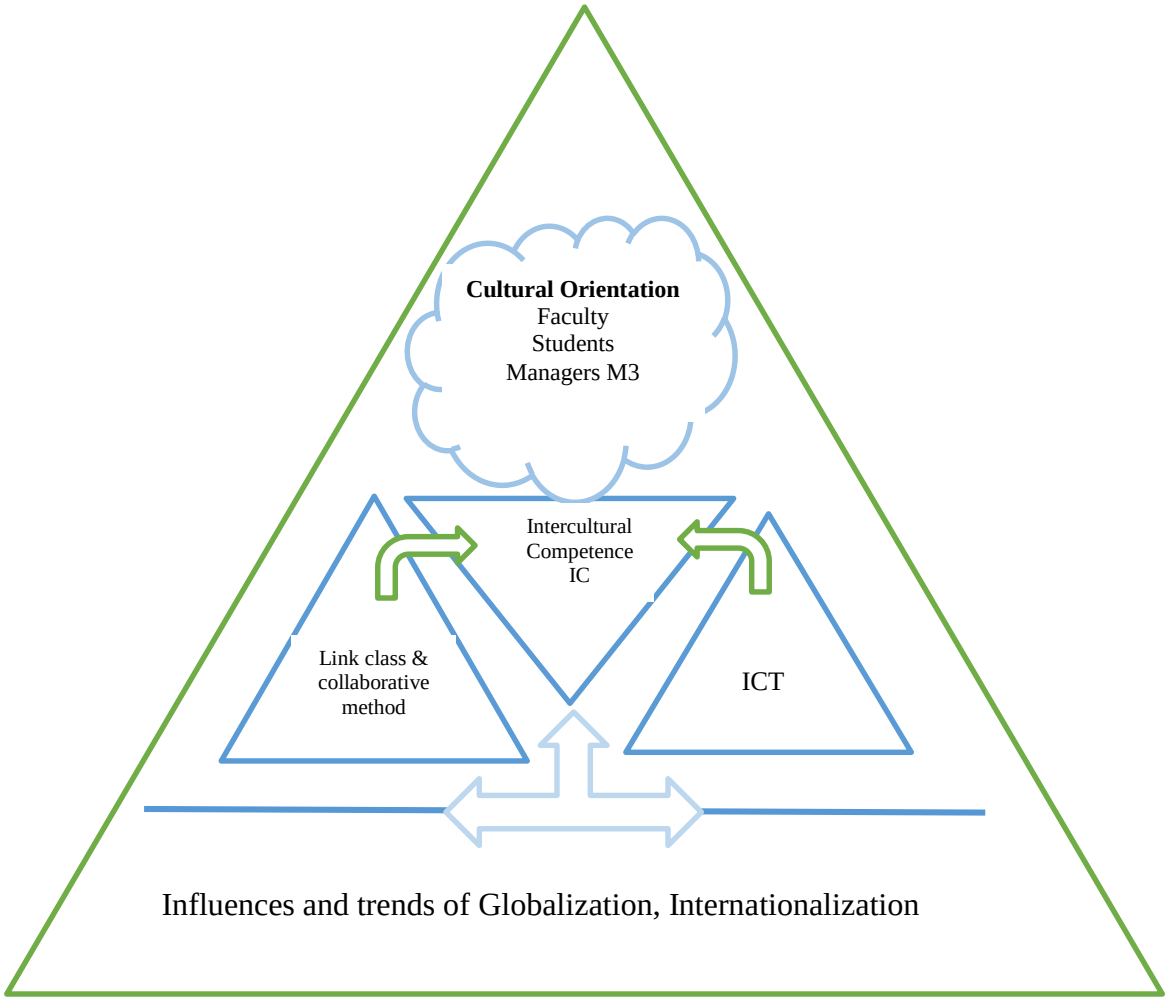


Figure 29. Research model to explain the outcome of intercultural awareness when merging a collaborative learning method with VC, an information communication technologies tool.

Note. This figure is a personal compilation.

Understanding technology supported multicultural learning

From the interaction of the variables in the model, the collaborative methods of teaching and the capabilities of ICT, we expect in the intervened group the outcome of IC. IC competence is gradually acquired in stages, Brake (1995). The first level is the development of the student's receptivity (conducted by faculty experts). The following levels are student's awareness to cross-cultural differences (cognitive element) and after that, experience of communicating with partners.

To test these variables in the model for understanding technology supported multicultural learning we defin0e the constructs to conduct three studies, to faculty experts, to students and to managers. A questionnaire is designed to be applied to faculty experts and analyzed in a qualitative study. A survey to be applied in students participant in the link class and a survey to Managers will permit us analyze the independent variables in a quantitative study.

Through the interviews to Faculty experts we see to know insights about intercultural competence, (Adler & Bartholomew, 1992; Laughton & Ottewill, 2000); their opinion of their preferred technologies, the methods, the impact of national differences and stereotypes in the learning process, if it is possible or not the assessment of IC and to support acquisition of global perspective in the students. Those results are analyzed in the constructs correspondence with the theory (Brislin, 1979, Davis, 1989; Alavi, 1994; Leidner & Jarvenpaa, 1995; Berger, 1996; Biocca & Harms, 2002; Rutkowski, 2002; Dennis et al., 2008; Bhaumik, 2012.

4.2 Constructs

Constructs to study Faculty experts:

(A) Insight of IC: The group of faculty experts' set of assumptions or "concept" of intercultural competence to contrast with the literature according to the most influential approaches in the field (see Table 12).

(B) Faculty acceptance of ICT for training in intercultural competence. (Brislin, 1979; Davis, 1989; Alavi, 1994; Leidner & Jarvenpaa, 1995; Berger, 1996; Biocca & Harms, 2002; Rutkowski, 2002; Dennis et al., 2008; Bhaumik, 2012).

(C) How cultural differences impact upon training according to faculty experts (Johns et al. 2003, Leidner & Jarvenpaa, 1995; Rutkowski, 2008).

The expected outcome of intercultural competence acquisition in students is investigated through the analysis of ICT capabilities and its impact in communication (Gefen & Straub, Carlson & Zmud, 1999, Dennis et al., 2008); differences of acceptance of ICT according national differences (Johns et. al. 2003, Bhaumik 2012) and awareness and appreciation of diverse cultures in accordance with Hett's Global Mindedness Scale (GMS) (Hetts, 1993; Carano, 2010) (Fantini, 2006).

(D) Acceptance of VC media capabilities to understand channels' relative abilities to convey messages, reducing equivocality (Daft & Lengel, 1984; Carlson & Zmud, 1999).

(E) Appropriateness of ICT media to communicate with partners, to identify capabilities of ICT that influence the development of synchronicity, the successful performance of conveyance and convergence in the communication processes (Geffen & Straub, 2004; Dennis et al. 2008).

(F) The outcome after an intervened link class using ICT and a collaborative method (Fantini, 2005) to identify awareness and knowledge of IC before and after the course.

(G) The awareness and development of social values in students and appreciation of diverse cultures in regards to responsibility, cultural pluralism, efficacy, global centrism and interconnectedness (Hett, 1993; Carano, 2010).

(H) Students' perception and appreciation of the method according to cultural differences (Johns et al., 2003).

Managers vision on technology, and the influence of their study program in the appreciation of IC is analyzed through the constructs:

(I) Vision of technology: Managers agree on the support of ICT as a medium to learn and train in IC (Carlson & Zmud, 1999; Dennis et al., 2008).

(J) Cultural knowledge and education of managers and the influence of their experience abroad (Hetts, 1993; Carano, 2010).

Measuring the Constructs

In order to test our model and based on the theory, we have defined the following constructs, A to J, for the three study levels (see Table 12) and we proceed to incorporate the items in three different tools, a questionnaire to interview faculty experts (see appendix H), a survey to students (see appendix K) and a survey to managers (see appendix O). The items are presented below and measure results in Appendix L, M and N, methods applied are explained in detail in chapter five according each study.

Item to measure frequency of the use of 7 different Media, based on MST (Dennis, A., Fuller, R. & Valacich J. 2008).

Items to measure Perception Factor when using VC to communicate. The questions in the survey were developed and adapted from SPT, Gefen and Straub (2004) :

14 questions 1/7Likert scale asking students' perception when VC is used to communicate, we look if any differences occurs in regards to national culture, this part is subdivided in:

Factor: Difficulty or facility to communicate, includes category of easy, clarity, enjoy or not

Factor: Pattern of communication: includes consistency, keep pattern of communication, comfortability or not, structurality,

Factor: Pattern of perception in regards of cold or not, impersonal or not, unsociable, or not and sensitive or not of VC as a way to communicate.

Items to measure Feeling or Emotional Factor when using VC to communicate The questions in the survey were adapted from MRT, Carlson, J. & Zmud R. (1999).

12 questions Likert scale 1/7 asking students' feelings when VC is used for communicating , we look if any differences occurs in regards to national culture, this part is sub divided in:

Factor: VC Functional Advantages when communicating: to know your teammate better, facility for instant feedback, for tailoring messages.

Factor: VC Sensorial Advantages when positive communicating: showing emotional tones, emotional attitudes, and discussing personal feelings

Factor: VC Sensorial disadvantages when communicating: feel uncomfortable

Items to measure capability of the media, the questions were adapted from MST Dennis, A., Fuller, R. & Valacich J. (2008)

Measured from low to high, 4 questions measured capability of the media in terms of:

Factor: VC speed

Factor: VC for transmit symbols, visual and verbal

Factor: VC craft a message

Factor: VC to processes again a message

Items to measure awareness of the meaning of cultural differences before and after the course:

Factors: cite a definition, recognize behavior, contrast with own culture, deal with culture stress, learning the host language, cite own historical factors, learning strategies for learning to adjust partner culture, could describe interactional behaviors, Questions adapted from: Fantini, A. (2005).

Items to measure awareness and appreciation of diverse cultures:

The questions were adapted from the Hett's Global Mindedness Scale (GMS) an attitude survey. The score items will correlates five theoretical dimensions: responsibility, cultural pluralism, efficacy, global centrism and interconnectedness cited in Carano, K., (2004)

Factor: affirmation of Interest in other cultures, advantages of cultural diversity.

Factor: Concern on poverty and in world Sustainability.

Factor Ethnocentrism

Factor Education and Globalization effects

In order to measure the constructs we conducted three separate studies in this research (see Table 12). Study 1 uses a qualitative approach complemented by a quantitative analysis with data analytics. A questionnaire was designed to interview international faculty experts (N = 24) who have used a collaborative approach for training in intercultural competence using various ICTs (including VC).

We seek to study (A) faculty experts' insight with regard to intercultural competence. Insight is defined as an "understanding of the true nature of something" (Merriam-Webster Dictionary), or as the "chance to understand something or learn more about it" (Macmillan Dictionary). We are using the definition of insight as the understanding of something. The

faculty experts represent 14 different nationalities and work in universities in North and South America, Africa, Europe and Asia.

We then analyze (B) the acceptance of ICT for training in IC, according to the opinions of the international faculty experts (Flynn, 1992; Biocca & Harms, 2002; Dennis, Fuller, & Valacich, 2008; Bhaumik, 2012). In construct (C) we look to understand the process of training in intercultural competence, based on theoretical frameworks (Brislin, 1979; Laughton & Ottewill, 2000; Rutkowski et al., 2002; Orpen, 2003) and how cultural differences impact students' attitudes, behavior, and learning during interaction in class, according to the faculty experts.

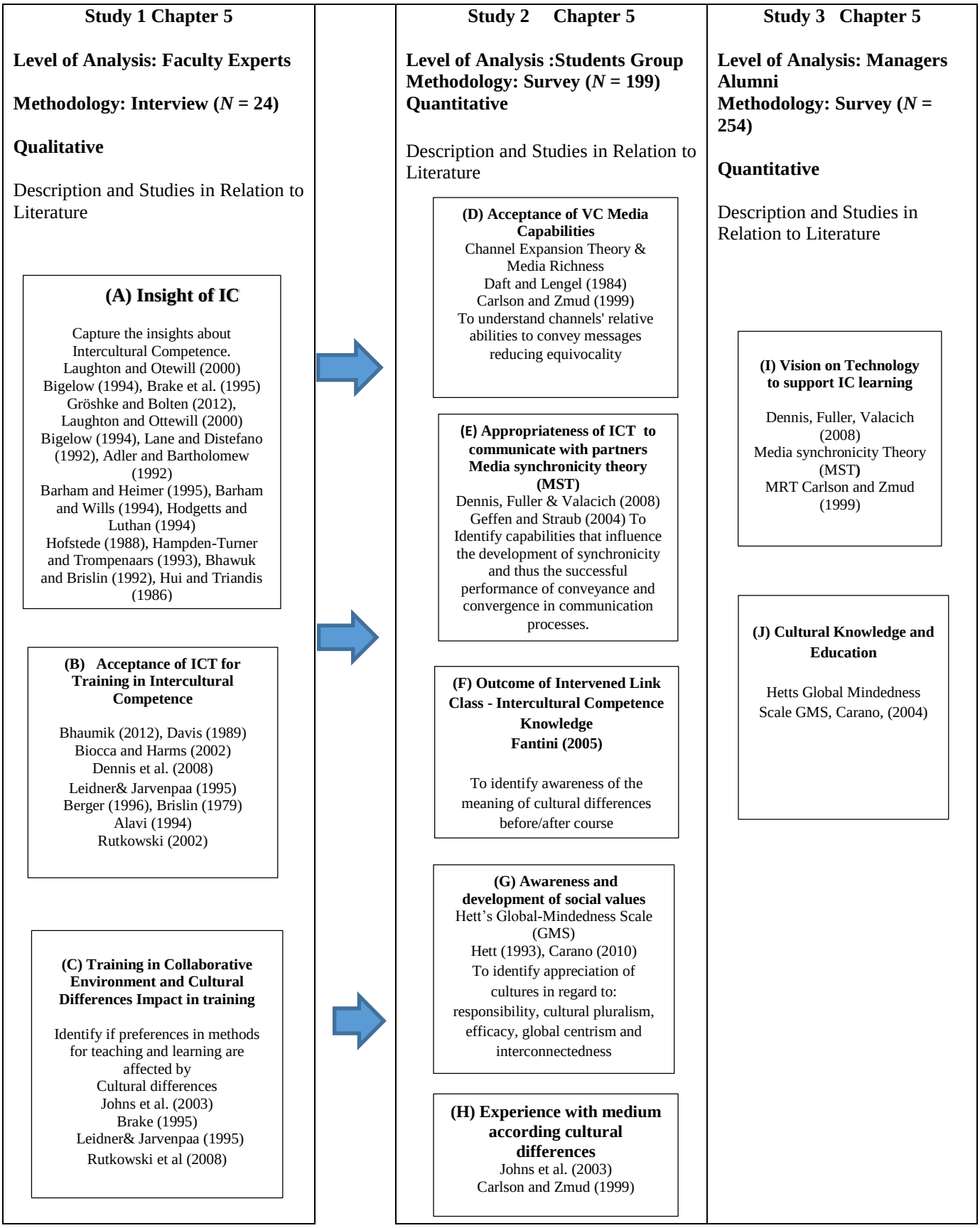
Study 2 uses a quantitative approach; a survey was created and applied to students (N = 199) of different nationalities participating in the link class cohorts from 2011 to 2014. The link class has the characteristics of a blended educational program using real time audio and video conferences for interaction. One of the learning goals of the course is to acquire intercultural competence and to learn in a multicultural environment. I taught the students in a Peruvian university and worked in collaboration with international faculty who in turn led their own groups of students in universities located in the Netherlands, Portugal, Germany, the United States and Taiwan.

The study of these students seeks to understand the interrelation between ICT tools and students' learning. We use construct (D), the acceptance of VC Media capabilities, to understand the channels' relative abilities to convey messages, reducing equivocality (Daft & Lengel, 1984; Carlson & Zmud, 1999). Construct (E) tests the appropriateness of ICT media to communicate with partners according students' participation in the link class. For construct (F), the outcome of the intervened link class, we seek to compare results before and after the course for the Peruvian group of students in the acquisition of cultural

awareness and intercultural competence (Fantini, 2005). With construct (G) we test the awareness and development of social values (Hett, 1993; Carano, 2010). In (H) we establish the experience of ICT according to cultural differences to determine whether there exists particular differences across different nationalities in the perception of the appropriateness of ICT and attitude to technology. (Carlson & Zmud, 1999; Johns et al., 2003).

Study 3 uses a quantitative approach; a survey was created and applied to medium- and senior-level managers (N = 254) who participated in a graduate program in a Peruvian university. The constructs presented in the study focus to test (I) managers vision of technology as a medium to support IC learning (Carlson & Zmud, 1999; Dennis et al., 2008) and (J) the cultural knowledge and education of managers and the influence of their experience abroad (Hetts, 1993; Carano, 2010).

Table 12. Constructs in the Model



4.3 Propositions in the Research

From the study of a technology-mediated multicultural experiential learning method in a Peruvian University, the following propositions emerge to analyze a group of faculty experts groups, a group of students and a group of managers represented by the alumni of the graduate school of the Peruvian University:

P1: Faculty experts agree on a common insight about intercultural competence

P2: Faculty experts agree that multicultural experiential learning supports the acquisition of global perspective.

P3: Faculty experts prefer videoconference to support students' training in intercultural competence due its capability for synchronicity.

P4: There is no consensus for assessing IC and there is an agreement for training IC through different methods that include experience.

P5: Faculty experts agree on the fact that national differences in a multicultural class influence the learning experience.

P6: Students' acceptance of ICT capabilities during the link class are independent of their national differences.

P7: Students agree on the opinion of the appropriateness of ICT for communication with partners.

P8. An outcome of IC knowledge in students is obtained in an intervened class.

P9: Students develop social values and an appreciation of cultural differences in a link class.

P10: Students' national differences impact on their interest in acquiring cultural competences

P11: Managers agree on the vision of technology to support IC learning.

P12: Managers perceive students possessing intercultural competence as important.

4.4 Data Triangulation, Interdisciplinary Triangulation and Theory Triangulation in this Research

According to Denzin (1978), the method of triangulation is defined as "the combination of methodologies in the study of the same phenomenon" (Jick, 2006, p. 602) and can be analyzed using five different methods: triangulation of data, of investigator, methodological, theoretical and interdisciplinary.

First, we have used data triangulation through the collection of three different sources of data in this research. For study 1, qualitative data comes from structured interviews as we look for rich and meaningful insights from faculty experts about learning and teaching IC with the use of ICT. Quantitative data for study 2 has been collected from a survey of undergraduate students who have participated in collaborative projects using VC. These groups were internationally diverse and belonged to different cohorts from 2011 to 2013 in the link class project. The study was conducted in a Peruvian university that linked and collaborated with selected universities in North America, Europe and Asia. The aim was to gather information about the capability of ICT tools to support communication processes as well as identify the students' appreciation of and preferences for the media in order to aquire intercultural competence, according to national differences. For study 3, a source of quantitative data comes from a survey applied to managers who are former graduates of

management sciences from the Peruvian University. In this group we examined whether there was an appreciation of intercultural competence skills, and the significance of ICT as a potential resource to use in training students in IC.

Secondly, we used interdisciplinary triangulation as more than one academic discipline was incorporated into the research process: information systems, organizational culture, cross cultural theory, educational management and statistics. According to Jick (2006), triangulation demands the mix and integration of data and methods: "the effectiveness of triangulation rests on the premise that the weaknesses in each single method will be compensated by the counter-balancing strength of another" (p. 604). As well as a means of compensating for certain methodological weaknesses, triangulation also succeeded in dealing with possible problems of bias and validity (Hassard, Kelemen, & Wolfram-Cox, 2008).

Thirdly, we used theory triangulation, through the utilization of different theories to interpret a set of data. From Information System, we supported on the Theory of Technology Acceptance Model (TAM), Social Presence Theory (SPT), Chanel Expansion, Media Richness (MRT) and Media Synchronicity Theory (MST) (see table 10). From Intercultural Competence we used the "transcultural competence" approach (see table) and Hetts' Global-Mindedness Scale to study awareness and development of social values.

CHAPTER 5: RESEARCH STUDYAND MAIN FINDINGS

5.1 Study 1: Interview of Faculty Experts Who Adopted Mediated Technology for a Collaborative Learning Program

In this study, which uses a qualitative approach, various international and professional faculty experts who use different methods for training in intercultural competence and ICT were interviewed. Propositions P1 to P5 were set for analysis based on the constructs in Table 12:

P1: Faculty experts agree on a common insight about intercultural competence

P2: Faculty experts agree that multicultural experiential learning supports the acquisition of global perspective.

P3: Faculty experts prefer videoconference to support students' training in intercultural competence due its capability for synchronicity.

P4: There is no consensus for assessing IC and there is an agreement for training IC through different methods that include experience.

P5: Faculty experts agree on the fact that national differences in a multicultural class influence the learning experience.

5.1.1 Method

A questionnaire was designed and tested according to the aim of the study. It was then completed in 24 in-depth interviews. Apart from two interviews, which were conducted via Skype, these interviews were carried out face-to-face. Each interview was recorded and transcribed with the consent of the interviewee (see Appendix H). All of the interviews were

conducted in English, except one which was conducted in Spanish and later translated into English. Questions were formulated in relation to the literature to analyze the constructs.

We looked to find if faculty members have a particular insight for intercultural competence (A). According to the literature review, intercultural competence demands developing a series of competences but a consenus has not been reached as to its exact definition. The Interculturalist approach defines IC as a transcultural (cross-cultural) competence to generate prognostic knowledge for business people (Adler & Bartholomew, 1992; Lane & Distefano, 1992; Barham & Willis, 1994; Laughton & Otewill, 2000). The Anthropologist/ Ethnologists approach (Triandis, 1977 cited by Gröshke & Bolten, 2012) is mainly interested in understanding the uniqueness of culture.

Laughton and Ottewill (2000) defined IC as a cross-cultural capability, obtained through the development of cross-cultural sensitivity. This characteristic is based on an appreciation and responsiveness to cultural differences, both are positive attitudes of individuals when interacting with a different cultural group. According to Bigelow (1994), intercultural competence is defined by cross-cultural business skills, composed of cultural understanding, adaptability, attitudes, perceptions, sensitivity, and diplomacy. A manager should develop each of these in order to be successful in international settings. Lane and DiStefano (1992) proposed that IC is the ability for managing cultural diversity; Adler and Bartholomew (1992) defined IC as a transnational skill in the individual who has a global perspective and the ability of cross-cultural interaction. In summary, the fundamental aspects needed in a definition of intercultural competence are the capacity to understand cultural differences, to know other cultures and behaviors, and the capacity for interacting.

We found a gap in the literature on intercultural competence regarding the understanding of a multicultural learning, the training experiences of faculty experts and the utilization of

learning methods using ICT. However, several models can be found to explain intercultural competence training in general terms. Brake et al. (1995) explained the process of developing cultural competence on four levels: receptivity, awareness, knowledge and behavior developing. This means that the individual shows a predisposition for learning and discovering other cultures, then they become conscious of the differences between their own culture and the others. Following in this process, they gain new information which is the basis for developing behaviors which reflect intercultural competence.

Laughton and Ottewill (2000) focused their approach on the simultaneous developing of cultural awareness and cross-cultural business skills as they explain the six stages of cultural learning: ignorance, realization, understanding, synthesis, selection and deftness. Theirs is a more extended explanation of the process presented by Brake et al. (1995).

On the other hand, the method proposed by Brislin (1979) joins the three key factors for cultural learning acquisition: cognitive behavior modification, experiential learning and interaction training. Furthermore, Berger (1996) argued that contextualization to develop the skill is essential.

The study of Leidner and Jarvenpaa (1995) introduced the assumptions of ICT and electronic classroom type in models of collaborative learning where, rather than being transmitted, knowledge is created or constructed by each learner. Flynn (1992) stated that collaborative models of learning positively improve individual and social attitudes, diversity of ideas and critical thinking. Another study that supported the significance of virtual collaboration among cultures was that of Rutkowski et al. (2002). Results from their research of virtual groups and e-collaboration (videoconference, email, chat session, distributed use of group support system GGS) found that by supporting decentralized group interaction, ICT promotes the spread of information and creativity.

To study the acceptance of selected ICT for training intercultural competence (B), we use several studies in our analysis. Schultz and Slevin (1975) and Davis et al. (1989) developed the technology acceptance model (TAM) which explains the perceived usefulness and usage intention of mediums in terms of social influence and cognitive instrumental processes. The user acceptance constructs are classified by usefulness, utility and ease to use and allow for a classification according to any or all of these characteristics of the medium that faculty experts reported during their projects.

On the other hand, in order to know how technology affects social cognition, Biocca and Harms (2002) developed the social presence theory model. The model is defined by the sense of being with others in a mediated environment. Gefen and Straub (2004) later expanded the model to know how medium users assess the degree of social presence required by the task. Dennis et al. (2008) explained which characteristics of the media play a role during communication processes.

The study of national differences and values allows for an identification of preferred methods of teaching and learning as affected by cultural differences (C). For the analysis in this study, we focus on orientation patterns that could affect technology-mediated communication (Brake et al., 1995; Johns et al., 2003; Rutkowski et al., 2008).

5.1.2. Participants

The participants were 24 faculty experts of 14 different nationalities. Some experts live and work in a different country to their country of birth (see Table 13). Sixteen of the participants hold a PhD degree and all of them work as professors and researchers and/or academic managers in universities. These universities are located in the following 13 countries: the United States, Mexico and Ecuador in America; Germany, the Netherlands, United

Kingdom, Portugal, Russia and Turkey in Europe; China, Taiwan and Japan in Asia; and Algeria in Africa. With regard to gender, 14 participants were female and 10 were male.

In terms of professional fields, the faculty experts come from a variety of disciplines: psychology, educational psychology (specializing in cognitive development), law, English and linguistics, instructional technology, social work, anthropology, international management, organizational behavior, accounting and finance, engineering, information technology and information systems among others. Each participant has on average ten years of experience.

Table 13. Nationality of Interviewees

Continent	Region	Nationality	Interviews
Africa (1)	North	Algeria	1
America (9)	North America	United States	7
		Mexico	1
	South America	Ecuador	1
Asia (6)	East	China	1
		Taiwan	2
		Japan	1
	South	India	1
Europe (8)	Western	Germany	3
		Spain	1
		Portugal	1
	Eastern	Russia	1
	Central	Hungary	1
	South Eastern	Turkey	1
Total			**24**

Note. This table is a personal compilation.

The participants were invited to take part in the interview by email in advance. The place, date and time were agreed and participants were informed that the interview would take 30 minutes, after which the results would be treated anonymously.

5.1.3. Qualitative and quantitative data analysis

We applied a mixed methodology to analyze the interview transcripts. For the qualitative method we applied structural coding, group coding and a quantitative data analytic process through SPSS Text Analytics for quantitative analysis.

In qualitative inquiry, *code* is defined as "most often a word or short phrase that symbolically assigns a summative salient, essence-capturing, and /or evocative attribute for a portion of language-based or visual data" (Saldaña, 2009, p. 230). Coding is the transitional process between data collection and more extensive data analysis. Saldaña's study (2009) presents 29 coding method profiles and their analytic possibilities. According to MacQueen,

McLellan-Lemal, Bartholow and Milstein, structural coding describes "a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question used to frame the interview" (cited in Saldaña, 2009, p. 1404). Saldaña (2009) argued that structural coding is appropriate for almost all qualitative studies, but especially studies with multiple participants, standardized or semi-structured data-gathering protocols, a list of major themes, hypothesis testing and exploratory investigations. It is also more suitable for interview transcripts, as used this study. The method implies collecting similarly coded segments for more detailed coding and analysis. Structural coding can also be defined by the frequencies of participants mentioning a theme or idea (Saldaña, 2009) (see Appendix I).

We highlighted one narrative per question and interview to capture consistencies in the responses and paid attention to other patterns such as differences or frequency (Saldaña, 2009). We looked for consistency in patterns and frequencies of participants mentioning a theme or idea. In the next level, group coding was applied by myself with the volunteer participation of a selected team of eight students who were enrolled in a research seminar during their last year of the bachelor program in the Peruvian university. These students were trained in the method of structural coding process via explanations and then participated in the group coding session. I conducted the group as a coding editor; through this method we reduced the possible bias of the researcher (see the results of group coding in Appendix J.)

A quantitative data analytic process utilizing SPSS Text Analytics for Surveys was used in the study to enrich the results of the qualitative method. This method categorizes responses and integrates results for a better statistical analysis, transforming text results from the survey into quantitative data. The solution uses natural language processing (NLP)

technologies specifically designed for survey texts; selected parts of the responses for each question and for each interview were introduced as data in the program SPSS Text Analytics for Surveys.

5.1.4. Results and evidence

An insight of intercultural competence.

A mapping of the insight of intercultural competence generated by the interviews with faculty experts is outlined in Table 14 and in Figure 29.

Table 14. Insight of Intercultural Competence: Descriptive Labels and Distinctive Characteristics Generated by Interviewees

Descriptive labels	% of responses highlighting	Number of Responses	Distinctive characteristics (Appendix J and appendix I))
Understanding other cultures	32.5	13	Hold skills to understand other points of view Sensibility and awareness To see other point of view Cultural intelligence
Develop behavior, values	30.0	12	Tolerance/respect/do not offend Empathy skills Able to recognize problem and situations Importance of values
Interact with other culture	25.0	10	Ability to relate with others Language and linguistic ability Ability to build and perform efficiently Improvement communication To perform effectively
Knowledge of other cultures	12.5	5	Get rid of stereotypes Breakdown stereotypes

Note. This table is a personal compilation.

Understanding other cultures (Lane & DiStefano, 1992; Bigelow, 1994; Laughton & Ottewill, 2000) is the most frequently mentioned meaning of intercultural competence as it was present in 32.5% of interviews. One of the respondents mentioned that understanding other cultures implies acting accordingly with empathy: "*Capacity to understand people*

from different cultures and act accordingly". Another respondent mentioned, *"So, we have to know ourselves and our assumptions and our belief system so that we can hold back judgments about people until we are able to understand their perspectives, what they are talking about."* Other respondents reported certain characteristics of an intercultural competent person, including being more open-minded and seeing other points of view as valid: *"Ability for people to understand and empathize with others, see other points of view besides their own", "Ability to step outside your own point of view, awareness [….] see things from a different point of view."*

Figure 29 shows the quantitative results of the SPSS Text Analytics data which presents the 32.5% frequency of responses for the category: "understanding other cultures".

To understand how these diagrams are obtained we should note that the text analytics data permit us to quantify textual responses for analysis. The software allows for a combination of methods because it automates the process without losing the control of the manual categorization process. It is based on automated natural language processing (NPL). Through the text analysis, a set of phrases and sentences and their grammatical structures create a context for the meaning of the responses.

First, we intervened manually to highlight responses from our interview and built a matrix coding (see appendix J). We then entered the answers in the matrix from the SPSS text analytics, using pre-built categories per interview. The automatized process uses linguistic algorithms, semantics or frequency and allowed for the creation of categories and consistent categorization of responses, transforming the interview responses into quantitative data that appears in our tables and figures in the results of this investigation.

To interpret results in the graphics, the list of categories of concepts (sets of similar concepts) are considered, depending on the amount of shared documents (represented by the triangles and its size is according the number of respondents). A strong relationship is

indicated by a thick line between concepts. In Figure 29, the relationship is strong between the following categories (and their distinctive characteristics): "understanding other cultures" (32.5%) and "develop behaviors and values".

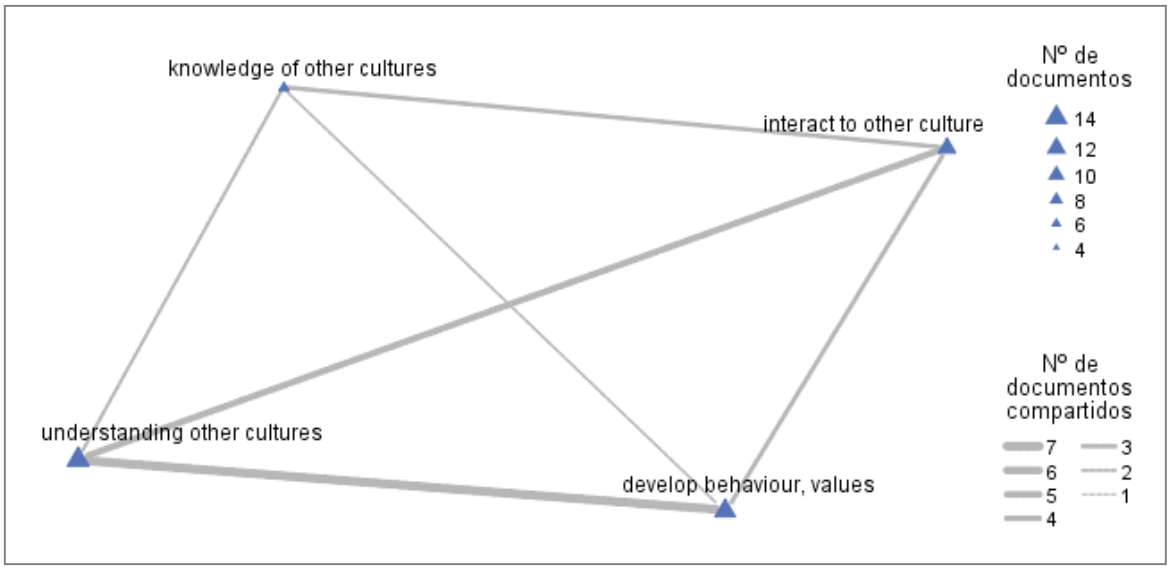


Figure 30. Insight of Intercultural Competence

Note. This figure is a personal compilation.

One of the respondents thought that intercultural competence provides the confidence needed to negotiate: *"be able to talk and understand. Negotiate, move freely among people of different cultures"*. Another respondent mentioned that "*intercultural competence means having an ability to agree and discuss issues by talking carefully"*. Laughton and Ottewill (2000) stated that a culturally competent person needs to behave sensitive, demonstrate an open mind and have the capacity to adapt to different environments. Another respondent stated that intercultural competence is the *"ability to communicate and negotiate to arrive at agreements, the ability to not always jump to conclusions".*

According to Barham and Heimer (1995), intercultural competence is a deep-rooted competence that deals with the inter-connection of three parts: cognitive, emotional and

psychological, and consequently, the capacity to create new knowledge and develop behaviors and values. Around 30% of respondents highlighted that developing behavior and values was reflective of intercultural competence. IC strongly relies on demonstrating respect, tolerance, being able to recognize problems in situations, not offending people and giving an importance to values. According to one of the respondents it is *"more about values than languages; don't offend people from different cultures, ability to tolerate mistakes and offensive situations, behave in a different culture"*. Similarly, another respondent mentioned that intercultural competence is about having *"to work with individuals from other cultures in an open, respectful and appreciative way; having a sense of a culture, an idea of the values and origins of a culture; be open, respectful and appreciative of a culture".* Another respondent emphasized the acceptance of differences in behavior: *"to be able to accept others and balance a variety of perspectives, and accept other ways of perception and behavior"*.

There is a widespread view that intercultural competence is described as interaction with other cultures, 25% of respondents highlighted this meaning and describe its characteristics as the capacity to relate to others, a language and linguistic ability, the ability to build and perform efficiently, and improve communication: *"break down stereotypes from other cultures, gain skills in terms of understanding cultures, be able to understand these cultures"*.

Finally, our respondents believe IC can be described as the knowledge of other cultures, a description referred to by Hodgetts and Luthans (1994). This description is highlighted by 12.5% of respondents and is illustrated by the following response: *"awareness that there are different customs and knowledge about the rest of the world, to be able to talk to others, see things from a different point of view"*.

Understanding different cultures as an expression of a global perspective

We stress the importance of knowing how to use this multicultural experiential method of learning as an expression of a global perspective (based on Adler and Bartholomew (1992)) that defines IC as a transnational skill in individuals who have a global perspective and an ability for cross-cultural interaction.

In the analysis of interviews, a couple of respondents emphasized the fact that although students cannot travel, the technology-based method for interacting helped students to expand their global perspectives: *"even without going abroad, they are having the international experience; it expands their global perspectives and changes perspectives about a country thanks to VC"*. Another respondent said that *"not every student has money to travel; it helps to obtain the cross cultural learning experience and helps people understand each other without a misunderstanding. Positive experience"*. The text analysis data reported a frequency of 23.8% for the concept of understanding different cultures and a better appreciation of people as an expression of a global perspective. The latter is expressed as new ways of thinking critically and acquiring new points of view; one of the respondents mentioned that after several interactions, *"students get prepared to engage in a conversation and the experience opens up the understanding and appreciation of real world behavior"*. Another respondent reported that *"most of the students have never been outside the United States. To stop and think from a different perspective (e.g. about Americans from a different point of view)"*.

Table 15. Expression of Global Perspective

Characteristics	% of respondents highlighting
Understanding different cultures and a better appreciation of people, think from a different perspective	23.8%
Knowledge acquisition, knowledge and information of other cultures	19%
Interaction with new people	14.3 %

Note. This table is a personal compilation.

Table 15 shows that a frequency of 19% responded with knowledge acquisition, knowledge and information of other cultures.

As mentioned by one of the respondents, after interacting with students from different nationalities, students learn how to develop the ability to control their own reactions. One of the respondents reported *"they become leaders because they train themselves, they show their true selves, improve English skills and the ability to communicate with others".* Another respondent focuses on the capacity to understand and identify new values: *"making students aware of different cultures: what is allowed, and what is not, realizing that there are different visions in the world, meanings of life, and existential values. It gives better appreciation of people's backgrounds; understanding people from different cultures"* (see Figure 30).

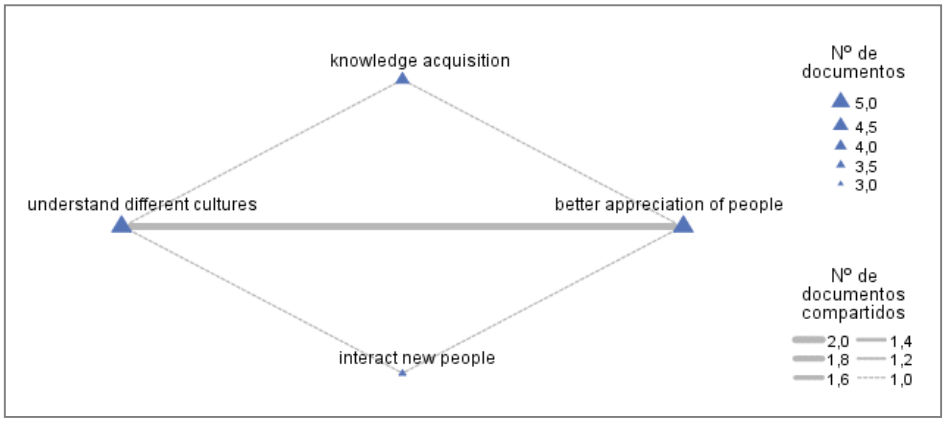


Figure 31. Online Cross Cultural Learning for Global Perspective

Note. This figure is a personal compilation.

Details of the faculty experts' responses have been reported using data analytics software. Figure 31 is a graph of a cluster analysis to explain how this multicultural collaborative method expands students' global perspectives, in the opinion of the faculty experts.

IBM (2016) defines a cluster as a group of related concepts generated by clustering algorithms based on how frequently these concepts occur in the document/record set and how often they appear together in the same document, also known as co-occurrence. The clustering process assesses the similarity value of each concept pair by comparing the number of documents in which the pair occur together to the number of documents in which each concept occurs.

An analysis of similarity value links was carried out. The concepts mentioned in the answers relate "support global perspective" with the improvement of students' capacity to appreciate people from different cultures. Data analytics report that the terms "better" and "appreciation" often appear together in responses. The terms are ranked highest in similarity which is shown in the graph by the thick line between "better" and "appreciation". After this

pair, the highest similarities are between “better” and “understand people”, and after “better” and “cultures”.

The data analytics software obtains results which rank the similarity between responses. An illustration of this can be seen from the interviews transcripts:

> *“Interact with diverse groups; understand people from different cultures; better appreciation for people’s backgrounds”; “Making students aware of different cultures: what is allowed and what is not; realize that there are different visions in the world, meanings of life, and existential values. It gives better appreciation of people’s backgrounds; understand people from different cultures”; “Limited in knowledge and understanding people. It gives a better appreciation for peoples backgrounds”.*

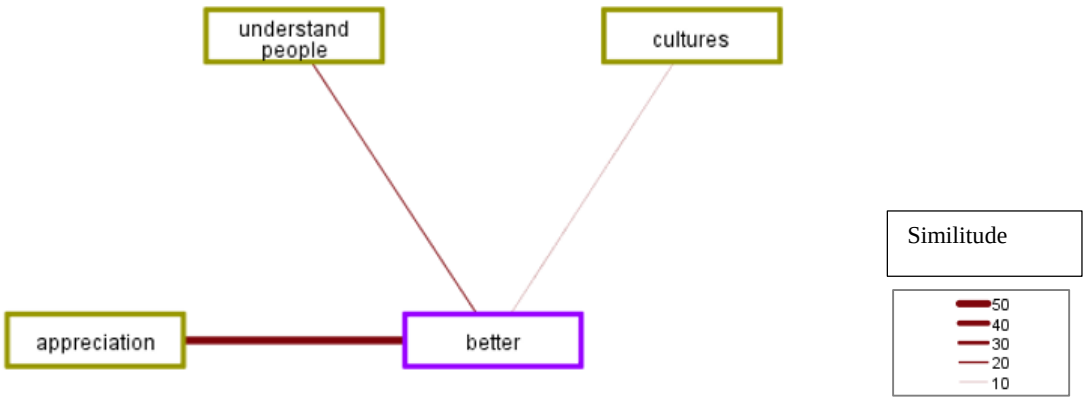


Figure 32. Benefits of expanding student's global perspective

Note. This figure is a personal compilation

As in Figure 31, in Figure 32 the similarity link value is measured using the cooccurrence document count compared to the individual document counts for each concept

in the relationship. The algorithm reveals the strongest relationships, meaning that the tendency for the concepts to appear together in the text data is much higher than their tendency to occur independently. The concepts that most frequently appear together are "students" and "cultures" or "students" and "understanding people". The thickness of the line in the concept graph represents the similarity link value.

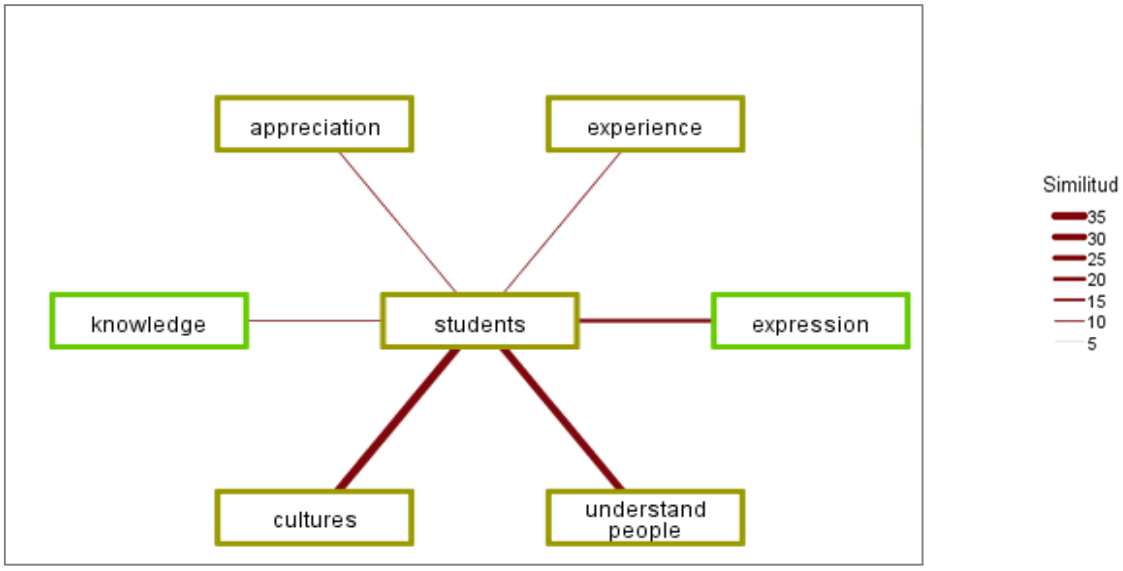


Figure 33. Students' manifestation of a global perspective

Note. These figures are personal compilations.

The use of information technology as the appropriate medium to support students in learning IC

The fourth question in the interview was raised to see if students are supported by the exposure to a diverse environment and the method of learning based on online communication. The question was also raised to find out if which mediums the faculty experts prefer.

The construct is based on various theories: social presence theory, the theory of acceptance model, media richness theory and media synchronicity. Social presence theory (Biocca & Harms, 2002) explains how technology might affect certain aspects of social cognition. The theory of acceptance model (TAM) by Davis et al. (1989) explains the perceived user acceptance usefulness, utility and ease of use of the medium. Media richness theory (Carlson & Zmud, 1999) studies the ability of a medium to carry information. Finally media synchronicity (MST) analyzes communication performance (Dennis et al., 2008) to explain how characteristics of the media play a role during communication processes.

With regards as to whether using ICT and online methods supports IC acquisition, one respondent's confirmation of this was supported by their findings in previous studies: *"the work that […] and I have been doing […] was reported in some other works suggests yes. That at least in in the groups that we're looking […] Chinese and U.S. students….yes, they say (students) it's very positive, very useful, very interesting, it opens doors."* For another respondent, the advantages come from the utility and ease of use of the medium, in accordance with TAM and media richness theory: *"Yes, it allows the students to stay in their usual environment and be members of an international team and share their point of view at the same time".* Another respondent mentioned that a *"connection with globalization, avoids misunderstandings between cultures, it is a revolution of education".* A different opinion comes from one respondent who said *"it depends on the region and the age of the student. Younger ones are more open to technology and it is easier for them."* Technology access (in terms of infrastructure), cost and availability vary in each part of the world. This can influence the familiarity of use or not, as well as the age of students who use the technology.

To find out which technology faculty experts prefer to use in the classroom, we analyzed medium preferences and frequency of use. The individual's selection is based on user acceptance constructs such as the usefulness and utility of the media. The theoretical framework to support these results is based on a technology acceptance model (TAM) (Davis et al., 1989) and the theory of channel expansion (Carlson & Zmud, 1999).

Regarding preferences between different mediums (videoconference, blackboard, blogs, forums, chat, email, and team work assignments using media tools etc.), the frequencies of responses are videoconference 35.9%, web applications 35.9%, blackboard 10.3%, chat interaction 7.7%, videos 5.1% and work assignments 5.1%. One of the respondents affirmed the properties of videoconferencing for training in IC: *"well I think it is important to have videoconferencing because that offers face-to-face […], before videoconferencing using the other distance learning tool (blackboard), I think the feeling of distance which is created because there is no facial contact really impacts us cognitively and emotionally, while we don't get so attached to a person."* Another respondent emphasized the capacity of videoconferencing to recreate a real environment: *"you can see the other person and it is very similar to the real exchange experience. Preferences: videoconference".* A diagram of responses is presented in Figure 33.

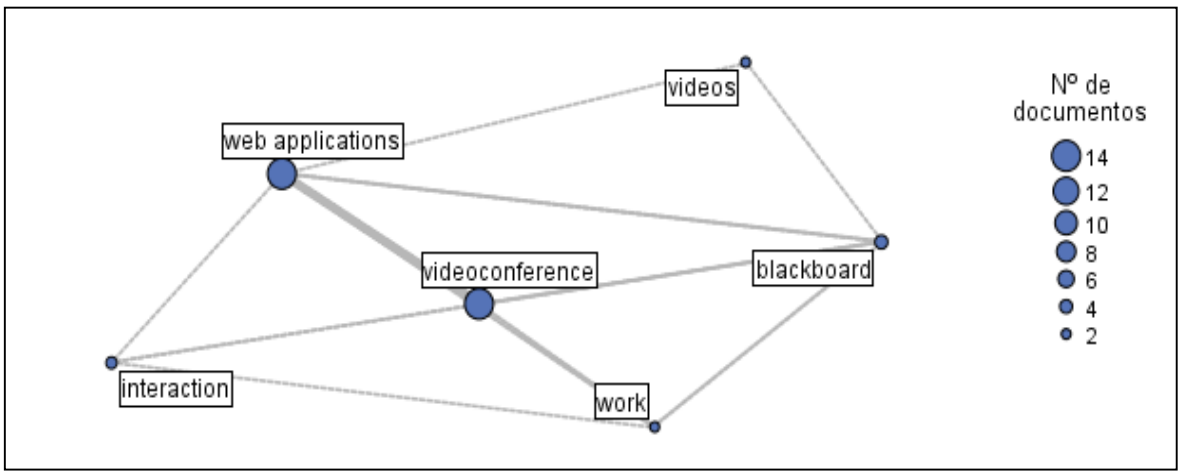


Figure 34. Faculty Preferences of ICT

Note. This figure is a personal compilation

Another respondent emphasized the aspect of equal opportunities that technological media provide to all students: *"Yes. For some of them this is the first and only opportunity they have to interact with others because many don't have the resources to travel. Preferences: Videoconference, chat, e-mail, team work assignments, blackboard, blogs"*. One respondent mentioned that *"it is useful as a simulation of a direct intercultural experience".* Another respondent reported that technological media benefits populations that are far from big cities and mentioned the use of the most popular social media site: *"improve skills of those who come from small towns. They overcome their initial fears and their knowledge and understanding of other cultures improve. Preferences: Facebook, e-mails"*. Similarly, another respondent answered: *"Yes. It is not possible for all the students to travel and study abroad. This is very close to it. Preferences: Videoconference, e-mailing, chats or Facebook"*.

A few negative responses were obtained as to whether technological media can support students in learning IC and these responses are supported by the fact that face-to-face communication tends to be the most effective learning strategy (Alavi et al., 1997): *"No, but not every student can afford going abroad so it is useful.* Preferences: *Face-to-face /videoconference, chat"*. Another respondent mentioned the importance of mixing the method with additional learning strategies: *"No. Even though there are unlimited virtual resources, we need more of other things. Preferences: Writing, reading, speaking, listening, interaction"*. Another respondent who didn't think technological media can support students emphasized the need for physical touch*: "Poor medium to teach IC. Culture plays out through all our senses and with virtual conversations you don't get that. Some cultures have physical touch as an important characteristic. Preferences: Face-to-face"*.

In this analysis it is important to take into account how diversity and a teacher's educational beliefs (about teaching and learning, about students and the role of technology) will definitely influence the use of technology in teaching (Bhaumik, 2012). It is also important to take into account how the educational management environment affects faculty decisions or their preference for one method of teaching over another. One of the respondents answered: *"it is very challenging, sometimes very difficult to use. A lot of complications. Preferences: Online platforms, videos, forums, chats"*. Technological resources, tech-person support, laboratories, videoconference rooms, software, and training are not easily available in all institutions. Complications can arise from bureaucracy that can inhibit teachers' use of technology in the class. Another respondent mentioned that *"it depends on which one is available: synchronous or asynchronous. Synchronous is good for real time communication. The other one focuses more on writing or reflecting. Preferences: Videoconference, chat (synchronous)"*. However, a key factor in the faculty decision-making process is the personal predisposition to use new methodologies, new technologies and being able to work outside their "comfort zone". One of the respondents mentioned that *"it depends on how the person feels in reality. Preferences: Face-to-face interactions"*.

How to assess level of IC among the students

The fifth question in the interview is about how levels of IC among the students taking part in the project can be assessed. We look at whether faculty agree on a specific method and look at findings relating to new tools or methods that faculty experts currently use.

The responses for how IC might be assessed were reported in the following groups: questionnaires 28.6%, other instruments 21.4%, it is difficult to measure 17.9%, it implies a periodical evaluation 14.3%, through feedback 10.7%, and according to behaviours 7.1% (see Figure 34).

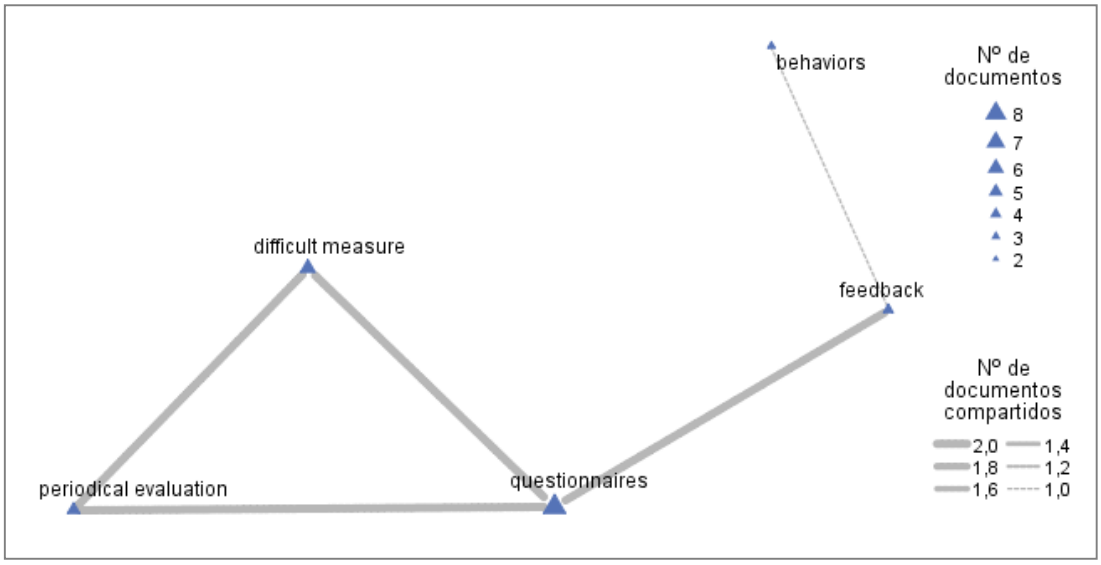


Figure 35. Faculty experts' opinion on IC assessment

Note. This figure is a personal compilation

Questionnaires to assess IC used to have the form of a pre-post, on this respect one of the respondents answered: *"I will prefer generally, for the quantitative methodological perspective where I coming from, a pre-post assessment, so people could imagine how they looked before and where they are afterwards."*

Although questionnaires and instruments rate higher in the methods for assessing IC, these are not broadly used due to the high cost of these instruments; one of the respondents mentioned: "*some of the instruments that I see to measure that … they are very expensive to administer, and when they ask questions, they tend to ask the students´ opinions of whether or not they feel they´ve learned more information, as opposed to actually assessing".*

Other respondents mentioned the available assessment methods "*pre and post surveys",* including technological media: "*check recorded conferences".* Another respondent took a similar position on not basing the assesment on just one instrument: *"assessment is a huge challenge because you cannot assess intercultural competence in one*

single instrument. In order to assess intercultural competence you need several instruments so the assessment effort is a huge one."

One of the respondents reported a method of assesment in a final project on a global issue: *"the professor puts out a global problem and then they mentor them for four to six weeks, while doing other work, doing research on the project, we used something called the synergetic model of collaboration, and that model is really based on all the cultural competence that we have studied […] identifyingthe aspects and dimensions of culture […] you can really see in the solutions that they come up with"*. Another respondent mentioned *"writing about experiences and moments of difficulty; self-reflective assignments"*. Assesment in terms of a student's outcomes, which is difficult to measure because it is an inner part of the individual, is mentioned by another respondent: *"not always evident in their behavior but it is how they perceive values and ways of thinking . Interacted with diverse groups; affects their perspectives"*.

The percentage of respondents who marked "difficult to measure IC" was 17.9%: *"That´s difficult! Because some students come to that more naturally than others".* Another respondent said *"that´s a very difficult question. Actually, there are several systems on how to assess competences of various sources. And still, they can´t completely give the full assessment, because competence is something you can´t touch, you can´t feel. It is something immaterial".*

One of the respondents is against assessing levels of IC: *"I am not sure that you should. I probably choose not to assess it. I don't think it is measurable. I think that we are doing a bad thing when the center of the education that we provide becomes assessment, it should not be because it is the teaching learning process, the experience of the student"*.

Interestingly, the answer from another respondent on the need for further investigation to assess IC through the impact of technology in different cohorts included comparing experimental and control groups: *"I think you also need to be aware of longitudinal studies in a proposed design, that's short or long as you will design, it but will be interesting to see what if the people that took the Videoconference would have different experiences of different culture competences a year from now, from those you didn't take the VC. I mean, that would be what would we desire, right?"*

The opinions on how students can be assessed ranged from one extreme as something non-measurable, subjective and difficult, to the other extreme as something that can be measured using pre-defined tests, (see Appendix G) or through other resources that are evaluated in class (feedback, class presentations, evaluating affection for other countries, a final project of global issues).

How students can be trained in developing intercultural competence

The sixth question in the interview referred to how students can be trained in developing intercultural competence. We looked to find if there is an alignment with the theoretical foundations and pedagogies for training in intercultural competence.

Responses were reported with the following frequencies: interaction with other cultures 33.3%, learning other cultures 25.9% (see the wider connecting line in the figure below), developing cultural awareness 11.1%, role plays 11.1%, study abroad 11.1% and group work 11.1%.

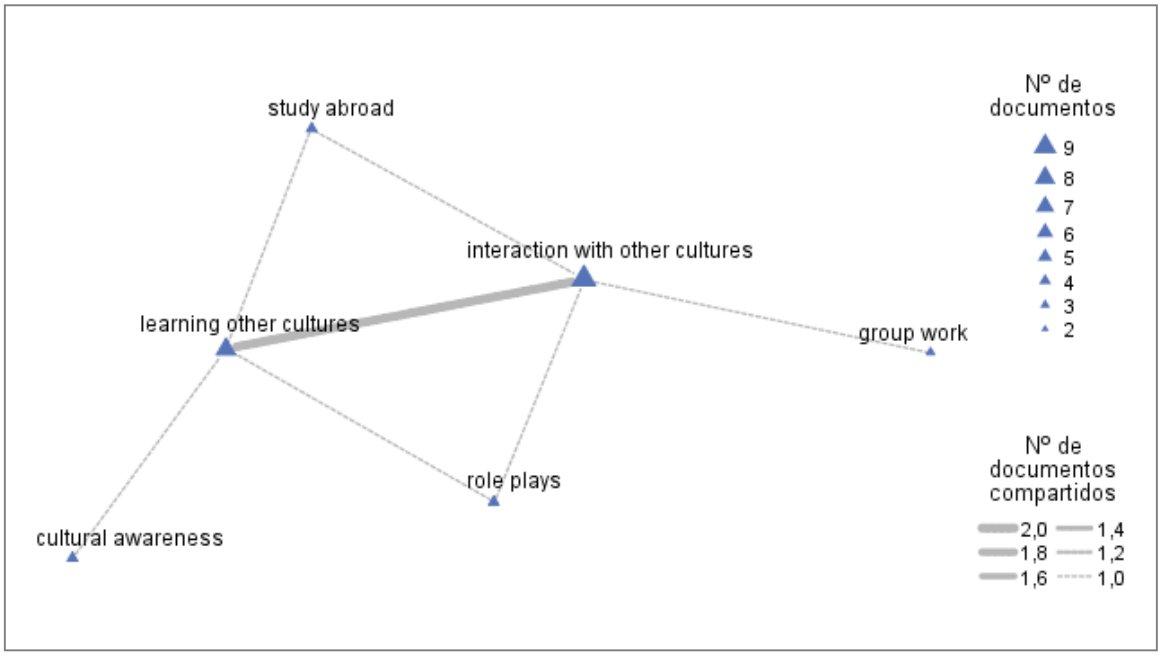


Figure 36. Possible ways of training intercultural competence

Note. This figure is a personal compilation.

One of our respondents envisages a holistic view of training of intercultural competence: *"I think if we are trying to establish students or develop students with cross cultural skills it has to be in cross courses not just in one course, in cross experiences, in a variety of different ways, not just one trip to Italy or whatever"*. Similarly, another respondent said *"if the students go abroad, they should be trained before they go, during the experience and after the experience in order to have a complete intervention"*. Another perspective is given by a different respondent: *"You just need to enable them not train them"*.

When supported by the method proposed by Brislin (1979), cultural learning acquisition demands cognitive behavior modification, experiential learning and interaction training, and the delivery of the cognitive process theory about cultural models. This is supported by one respondent's report training in IC: "*I think theory and practice should go hand in hand. Without theory to support…If you just say "Oh, I experience this, I*

experienced that" so it is not really detailed". Another method of training is reported: *"if we were not able to travel to those cultures, I would sort of create focus groups and give them larger focus groups that can introduce them and give them a task to do together, and that's when you experience how people behave".*

One respondent mentioned other methods of acquiring IC: "*Definitely watching movies. Studying other languages. […] observing any kind of cultural traditions that might be accepted in the community. It´s a good question, because it is forcing me to think more outside of the classroom".* This approach to training is advocated by Berger (1996) who argued that contextualization is essential for developing skills. The same respondent added: "*one thing that we attempt to do when we are making the Muslim Conference, we have a mosque a local mosque here and then we noticed we´ve never been there, and so that´s when we take a field trip, you know?"*

Faculty expertise is demonstrated through alternative methods of training in intercultural competence that are supported by different methods of teaching. Factual, analytical and experimental teaching (Laughton & Ottewill, 2000), are conveyed through lectures, teaching theories (level 1), learning languages, doing projects (level 2) and through virtual and multicultural projects and role plays (level 3). One of the respondents mentioned: *"With forums, student can express themselves anywhere and at any time, apply knowledge to work, understand people from different cultures"*.

Additionally, faculty expertise is applied through an adaptation of their behavior in class to provide a climate of trust. Through being reflective and more sensitive, becoming a guide and a facilitator in the learning process, faculty experts adapt the old generational way of teaching to a more modern one. This new method of teaching is considered more suited

to millennial students' patterns and preferences for learning with teaching values that are supported in the literature (Rutkowski et al., 2002; Bhaumik, 2012; Johnson et al., 2013a).

Influence of students' personality and national culture in the online learning experience

For the question of whether some students benefit more or less from such online experience because of their personality, independent of their national culture, the responses were: as functions of their personality 69.6%, other factors 30.4%. One of the respondents reported that *"not every student is the same, some are quieter than others, some are more willing to talk and share their ideas. Some tend to dominate"*.

It is important to note that in this type of method of teaching and learning, lectures are not the main instructional form; faculty experts adopt facilitators of the learning process where ICT is an enabler rather than a driver of the teaching/learning process (Bhaumik, 2012). One of our respondents mentioned the impact of the mediated technology in this method: "*they (the students) are crazy about technology. That´s what affects them, they are interested in working with it. They are digital makers, you know?"*

Interesting results were found regarding the influence of stereotypes and western culture during the online experience. Respondents reported the challenges that are present during the online experience, one respondent stated that: *"usually the students, you know, they have very clear stereotypes on the type of people that they're going to meet [...] at the beginning they're kind of afraid of working with people from a modern country, they think: "Oh, probably they will know more than us or they're going to be smarter than us". And usually, as you probably know, we have all type of students in every country so… They meet good students; they meet lazy students, whatever, right? So it's very good in that sense as a swap."*

The students strive to be accurate and not be influenced by stereotypes, indeed the aim is to aid students to not use such generalizing stereotypes. One of the respondents mentioned: *"so sterotyping …they (students) need to understand it is not necessarily a bad thing".* During interactions, students face some situations that confront stereotyping, for example one respondent reported a situation in one of the classes between Russian and Mexican students*:"usually they have a certan idea of all the Mexicans being Catholic. This time we had a girl in the class, and she was agnostic, so she openly said it:" I don't know if I believe in anything". It was difficult for the other students because they had made up their mind that "all Mexicans are Catholic".* This kind of situation will help students to build a non-stereotyping disposition. Another respondent reported: *"ost other cultures when they made contact with us they expected it to be a Muslim country so all the students should wear a veil, and the boys should have a beard or, I don't know, be dressed in a special way."*

We can say that media, TV, movies and the internet have the strongest influence on both the interpretation and influence of western culture and in the creation of stereotypes. One of the respondents reported this in terms of how they experience the influence of western culture, saying *" that is real hard "* and continued:*" I (American) have a co-teacher in China , and with almost everything I ask her "Is this going to work? What do you think, what would your students think?"* This teacher's concern comes more from the styles of learning than the students' interaction with different cultures; in this case the methods should be observed and analyzed first to see if global virtual teams from different time visions (Saunders, Van Slyke, & Vogel, 2004) match well without prior local training. I observed conflicts when scheduling deadlines between Peruvian students (who have a more timeless and polychronic-oriented time vision) and their American or German partners who have a clock vision, oriented towards monochronic and linear time.

To conclude the findings from these interviews, faculty experts agree that this ICT-based intercative class in an international enviroment allows for effective communication among all kinds of students' personalities, for both introverted and for extroverted people. Shy people need the support of the teacher to build confidence (or to improve their level of the language used in communication). One of the respondents presented an example of how interaction and different values can positively affect the identity of the individual. In this situation, the respondent is from a culture where the value system is very rigid, not flexible: *"I give you one episode: one of my students (Japanese) asked his Chinese partner ..What kind of boys do you like? And the Chinese girl answered "I want to get married to a smart guy", because Chinese girls value talent more than appereance, and my student was very happy to hear that commnent because he was short, not physically attractive".*

One of the respondents mentioned that using technology for teaching IC can be more effective than a short study abroad as students can remain passive outsiders when travelling: *"it is even more effective […] during a short visit students never becomes inmersed in the other person's culture, because they stay in the group, they see the other culture as tourists not as people living there, and even exchange students are not necessarily involved in the other culture".*

A mix of methodologies (interactive VC, chat, forums, social media) balances the different personalities in the group, creates an open mind and contributes to a maturity within the group. Finally, each student's level of interest will also impact on the efectiveness of learning acquisition.

Faculty experts reported a set of personality characteristics and conditions which they consider influences the success of this endeavour: be empathetic, a risk taker, have a caring personality, be committed, be honest, open minded, flexible, an effective communicator, be helpful and be innovative. One of the respondents mentioned:

"intercultural training is a must, you know in the commitment, because it takes much more time, and effort. It is important to build a good relationship with the instructor to start with". We add and conclude in this analysis of faculty experts that, in order to be successful as an academic entrepreuner, faculty experts must be aware of this big responsibility in their role not just to teach but also to deliver values to their students (Moosmayer, 2012). This next quote summarizes one of the respondent's thoughts as a conclusion of training in intercultural competence in this technology-mediated class, and the worth of building values in students: "*I want people to come away with the feeling: "Wow, I need to develop more patience more open-mindedness. I have to think before I say something, or before I make a judgment, and I want curiosity, a sense of curiosity about the world... And then I think it´s been worthwhile".*

5.2 Study 2: Student Participants in an International Collaborative Link Project

The following is an analysis of students who participated in an intervened collaborative learning project using information and communication technologies in order to obtain an understanding of the multicultural experience from the approach of the intervened group. We analyze the following propositions:

P6: Student's acceptance of ICT capabilities during the link class are independent of their national differences.

P7: Students agree on the opinion of the appropriateness of ICT for communication with partners.

P8. An outcome of IC knowledge in students is obtained in an intervened class.

P9: Students develop social values and an appreciation of cultural differences in a link class.

P10: Students' national differences impact in their interest in acquiring cultural competences

5.2.1 Method

A survey instrument was developed building upon constructs from existing literature in the fields of information system theory and intercultural training. The constructs (D – H) for the survey are presented in Table 12.

We analyzed the acceptance of ICT for training in IC (D) to know how medium users assess different media abilities for different purposes and to assess the ability of the medium to carry information using media richness theory (Carlson & Zmud, 1999). The constructs of ICT capabilities, to understand perception of channels (perceived richness) and relative abilities to convey messages reducing equivocality, are based on media richness theory (Carlson & Zmud, 1999).

We examine the appropriateness of ICT (E) and the roles of media in the communication process using media synchronicity theory (Dennis et al., 2008). The perceived richness scale is sufficiently generic to use with any communication channel and can identify either capabilities that influence the development of synchronicity and successful convergence, or the development of a shared meaning using media synchronicity theory (Dennis et al., 2008).

With construct (F) we test results obtained before and after the link class: the outcome of intervened link class and intercultural competence knowledge. (Fantini, 2006).

We investigate students' appreciation of diverse cultures (G) through the attitude survey of Hett's Global Mindedness Scale (GMS) (Hett, 1993; Carano, 2010). This analyzes commonalities of the welfare of the global community and the awareness and appreciation of diverse cultures through testing items that reflect theoretical dimensions: responsibility, cultural pluralism, concern for poverty and sustainability, efficacy and global centrism.

With construct (H) we identify if differences in the experienced with ICT during the link class are affected by cultural differences of students (Johns et al., 2003).

These theories were fundamental for building a multi-item construct of students' preferences and perception of technology in the link class and collaborative project.

5.2.2 Quantitative data analysis

The survey instrument is a questionnaire and consists of 68 questions organized in seven parts (see Appendix K). In the introduction to the survey, respondents are informed that the aim of the survey is to identify important issues and criteria for training in the acquisition of cross-cultural competence skills. The survey is organized as follows (including which theories were incorporated into the various parts):

Part I. One question asking about the frequency of use of seven different media with their team mate. Media synchronicity theory (Dennis et al., 2008).

Part II. Fourteen questions in a 1/7 Likert scale to asses students' experience with their communication partner using VC to communicate. Media richness theory (Carlson & Zmud, 1999).

Part III. Twelve questions to assess the perceived richness of VC when communicating. A Likert scale 1/7 assesses functional advantages (e.g. to know your teammate better, facility for instant feedback, for tailoring messages) and sensorial advantages and disadvantages

(e.g. showing emotional tones, emotional attitudes, and discussing personal feelings). Media richness theory (Carlson & Zmud, 1999).

Part IV. Four questions to evaluate the capability and speed of VC media to transmit symbols, visual and verbal, to craft a message, to process a message again. Media synchronicity theory (Dennis et al., 2008).

Part V. Eleven questions are asked twice to know students' differences of opinion before and after taking the course. Questions are focused on the meaning and knowledge of culture and how to deal with cultural differences (Fantini, 2006).

Part VI. Thirty statements are adapted from the Hett's Global Mindedness Scale (GMS) to create an attitude survey. The score items correlate five theoretical dimensions about IC: responsibility (a deep personal concern for people in all parts of the world which surfaces as a sense of moral responsibility to try and improve conditions in some way); cultural pluralism (an appreciation of the diversity of cultures in the world, a belief that all have something of value to offer. This is accompanied by taking pleasure in exploring and trying to understand other cultural frameworks); efficacy (a belief that an individual's action can make a difference and that involvement in national and international issues is important); global centrism (thinking in terms of what is good for the global community, not just what will benefit one's own country. A willingness to make judgment based on global, not ethnocentric, standards); and interconnectedness (an awareness and appreciation of the interrelatedness of all peoples and nations which result in a sense of global belonging or kinship with the "human family") (Hett, 1993; Carano, 2010).

The questionnaire takes about 30 minutes to complete and was delivered online through Survey Monkey, a survey development software. Students located abroad who were

participants in the link class completed the survey online and students located at the Peruvian university used printed questionnaires.

5.2.3 Participants

A sample of 199 responses was collected between 2012 and 2014 from participants in the link class run between ESAN (Peru) and other universities in different countries. The distribution of the respondents was 52.2% male and 47.8% female. In order to classify the sample, we used the nationality of participants rather than country of residence; there were no participants with a bi-cultural nationality in this sample. Of the respondents, 91% were undergraduate students and 65% of the sample had never travelled for study abroad.

In order to assure a greater internal validity, populations that were too small in size (inferior to 12) were not included in the sample. Therefore German, British, Russian, Spanish, Greek, Romanian, Italia and Czech students (as well as one participant who did not want to disclose their nationality) are not included in the sample. As a result, the selected sample for the study was (N = 157) representing 77.8% of the general population composed for this sub-sample with 62.4% Peruvian (98), 15.3% French (24), 11.5% of Dutch (18) and 10.8 % American (17).

The classes were conducted in English; native English speakers were 11.5% of the sample, native Spanish speakers 61.8%, native French speakers 15.3% and native Dutch speakers 11.5%.

5.2.4 Results and evidence

A statistical analysis was carried out using statistical data package SPSS version 21.0. Table 16 shows a summary of the results and new constructs according to each evaluation with the statistical tool.

Table 16. Survey for Students: Results and New Constructs

Evaluation	Theory	Testing/ assessing	Results and new constructs
I	MST Dennis et al. (2008)	Frequency/intensity in media use	Chat *M* = 2.16 *SD* = 1.32 Email *M* = 1.87 *SD* = 1.32 VC *M* = 1.10 *SD* = 0.774
II	MRT Carlson & Zmud (1999)	Experience with communication partner	ICT media are easy to use in a collaborative link class α =.74 ICT media are suitable to maintain a personal communication style α =.75 ICT media appear as a cold atmosphere in a collaborative link class α =.75
III	MRT Carlson & Zmud (1999)	Perceived richness of VC	ICT media facilitate the expression of human emotions in a collaborative link class α =.75
IV	MST Dennis et al. (2008)	Capability of media to transmit/process a message	VC high capability to transmit physical, visual and verbal symbols *M* = 2.55 *SD* = .82 VC medium high capability to process again a message *M* = 2.30 *SD* =.738 VC medium high capability to craft a message *M* = 2.27 *SD* =.756
V	IC Fantini (2006)	Intercultural, Knowledge, Awareness, acquisition and, definition	Items S1 to S12 in table 17 all show positive differences Before/ After, P<.000 in all items Link class support IC: learning, knowledge, and awareness
VI	Interculturality Global Mindset Hett (1993)	Global Perspectives awareness and appreciation of diverse cultures.	ICT media in a collaborative link class support development of social values" α =.84 ICT media in a collaborative link class facilitate cultural understanding and cultural pluralism α=.83 ICT media in a collaborative link class permit students to be aware of the challenges to resolve human problems α=.7
VII	MRT Carlson & Zmud (1999)	Cross Cultural comparison Experience medium with communication partner	Peruvians find ICT media, easier to use in a collaborative link class than French (0.832, *p* = .001), medium higher than Dutch (.763 *p* = 0.009). Peruvians find ICT media more suitable to maintain a personal communication style than French (.804, *p* =.002). Peruvians find ICT media can appear as a cold atmosphere in a collaborative link class more than Americans (.942, *p* = 008) Peruvians find ICT media facilitates the expression of human emotions in a collaborative link class, more than Dutch (1.0, *p* =.000), medium higher than French (.785, *p* = .002) Peruvians find ICT media support development of social values more than Dutch, (.887, *p* =.000) and medium higher than French (.626, *p* = .002).

5.2.4.1 Results of Evaluation I: Testing frequency and intensity in media use (Dennis et al., 2008)

Using media synchronicity theory (Dennis et al., 2008), students were asked to indicate with what frequency they used each media when interacting with their partners. The media to choose from were chat, VC, email and electronic conference. Students indicated the frequency for each one (never, once a week, two times a week, three times a week, or four times a week). Results report that the most-used media was chat and confirms the students' habit of communicating and organizing agreements for meetings with immediate feedback. Interaction outside the class was necessary to complete assignments, organize the presentation, discuss deadlines and confirm the convergence process required for the task.

In the correspondence analysis, a K-median clustering was used and the results are shown in Figure 36. Overall the results indicated that students mostly have intensive experience with chat (M = 2.16) (SD = 1.32) and email (M = 1.87) (SD = 1.32). As the method of the course proposes that the student experiences using videoconference (M = 1.10) (SD = 0.774), the results represent the intensity with which the technology was used. The class was organized to meet once a week. Of an entire semester (14 weeks), the class connected by VC for a limited number of 6-8 weeks, mostly due to the differing academic calendars for institutions in Peru, North America and Europe. However, as the teachers requested that assignments and tasks were completed in international teams, students had to frequently contact each other more frequently out of the class. This contact was made most frequently through chat and email.

These results support the proposition based on the theory, that students use a mix of mediums during the semester. When working outside the class, chat is preferred (3 times a week) to facilitate synchronicity and convergence processes (see Figure 36).

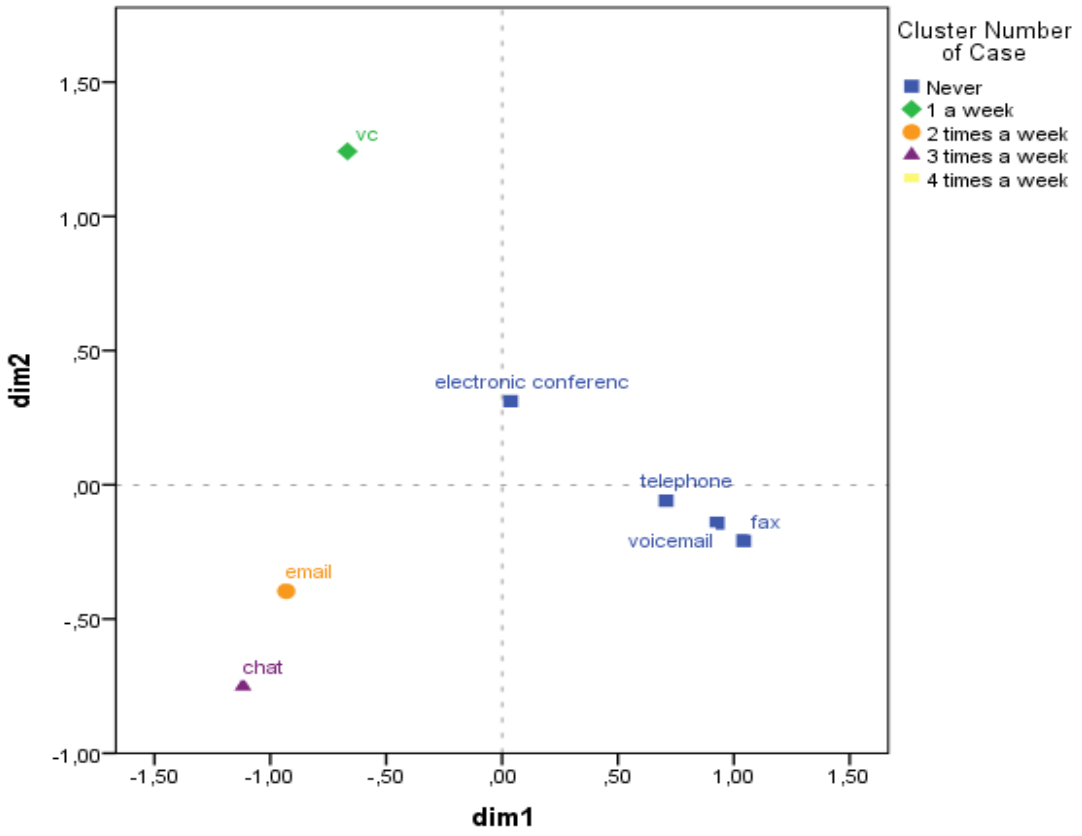


Figure 37. Users' experience with ICT in terms of frequency

Figure 36 is a correspondence analysis of the frequency with which each media was used by students when interacting with their partners. The goal of correspondence analysis is to make biplots for correspondence tables where the row and column variables are assumed to represent unordered categories. Both variables are only inspected for their nominal information. The analysis was done following two steps. The first step was to conduct the simple correspondence analysis of the relationship between the categories of two qualitative variables and observe this relationship on a graph called a "perceptual map." See appendix R for the detailed procedure of creating a perceptual map.

In Figure 36, we link the media tools used by the team with the frequency of use of this tools according to the SPSS statistics. The dimensions by themselves do not have a meaning, rather they allow for a better view of the way the answers correlated. For example, VC (videoconference) has the strongest relation with the answer "once a week" which means that there are more cases (answers) to indicate that the students who only used VC with their

team did so once a week. This is correct according the frequency of VC planned for the weekly link class.

5.2.4.2 Results of Evaluation II: Testing experience with communication partner (Carlson & Zmud, 1999)

Fourteen questions in the survey assess students' experience when using VC and are analyzed from the constructs of channel expansion theory and media richness perception. (Carlson & Zmud, 1999). To evaluate whether responses of related items are stable across the sample, we conducted a confirmatory analysis; the estimated Cronbach's alpha (α) for the three constructs were all above 0.70. A seven-point Likert scale was used to measure each item (i.e. strongly disagree, moderately disagree, slightly disagree, undecided, slightly agree, moderately agree, and strongly agree). See the table in Appendix L.

The items addressed refer to the experience factor of communicating through VC and refer to characteristics such as ease, clarity, and enjoyment when communicating with partners in class. The new construct that reflects the characteristics of comfort and wellbeing of these types of media for communicating is: "ICT media is easy to use in a collaborative link class (α=.74).

The second item refers to the experience of feeling comfortable and the facilitation of interactivity. The second new construct is: "ICT media is suitable to maintain a personal communication style" (α= .75).

The third item refers to the difficulty to replicate the sense of a face-to-face encounter. The third new construct that reflects this is: "ICT media can create a cold atmosphere in a collaborative link class" (α= 0.75).

5.2.4.3 Results for Evaluation III: Perceived richness of VC (Carlson & Zmud, 1999)

The theoretical framework referring to students' perceived richness of VC emphasizes the communication of emotions and feelings when communicating with team members. Channel expansion theory and media richness perception based on (Carlson & Zmud, 1999) identifies certain experiences as important in shaping how individuals develop richness perception for a given channel, messaging topic or organizational context when in communication with co-participants.

The new construct that refers to how ICT is perceived for facilitating and capturing the expression of emotions during interactions is "ICT media facilitates human expressions in a collaborative link class" (α=0.89).

5.2.4.4 Results of Evaluation IV: Capability of the media for transmit a message (Dennis et al., 2008)

Four questions evaluate the capability of VC media to provide speed, symbols, visual and verbal transmission, to craft a message and to reprocess a message. These questions are supported by media synchronicity theory (Dennis et al., 2008). A correspondence analysis using K-median clustering was applied and the results are shown in Figure 37. The results indicate a high capability of VC to transmit physical, visual and verbal symbols (M = 2.55) (SD = .82) and a medium-high capability to reprocess a message during decoding (M = 2.30) (SD = .738). VC has a medium-high capability to craft a message before transmission to ensure meaning of message (M = 2.27) (SD = .756). In convergence, a faster capability is preferred by students and VC has a high capability to deliver messages (see Figure 37).

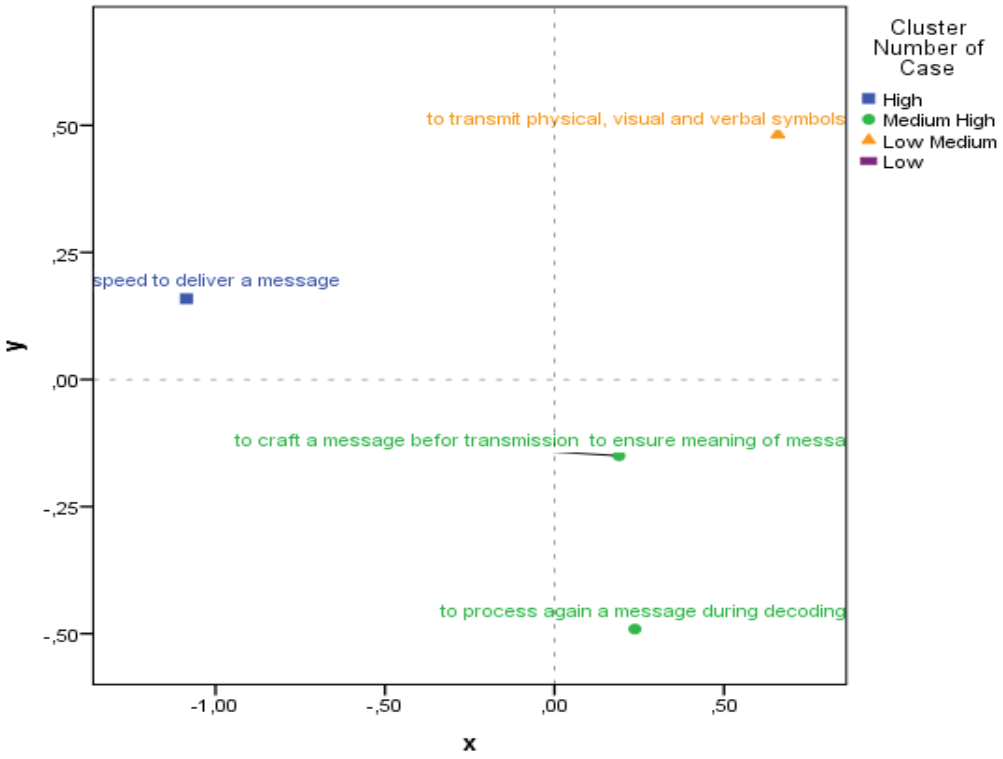


Figure 38. Users' experience with VC in terms of capability of the media.

A correspondence analysis was applied to analyze users' experience of videoconference in terms of the different capabilities of the medium, particularly the speed to deliver a message, it's capability to transmit physical, visual and verbal symbols, to craft a message before transmission to ensure the message's meaning and to process a message again during decoding. This analysis uses media synchronicity theory (Dennis et al., 2008) (see appendix S).

5.2.4.5 Results of Evaluation V: Intercultural awareness, acquisition and definition (Fantini, 2006)

Eleven questions were asked at two separate stages to understand students' opinion before and after taking the course. The questions focus on the meaning and knowledge of culture and how to deal with cultural differences (Fantini, 2006).

Appendix M shows the questions in the questionnaire as well as the results for the mean and standard deviation obtained in the survey to test the IC abilities of Peruvian students. For the experimental group, all the items show a mean difference after the course, with a significance of 0.000. Table 17 summarizes the mean and standard deviation results (in parenthesis) of the responses for the assessed perceptions.

Table 17. Mean and Standard Deviation (in parenthesis) for Peruvian students (experimental group)

Acquisition perception	Link class project	*M* *SD*
S1: Link class promotes culture concept knowledge	Before	4.81 (1.22)
	After	5.74 (0.98)
S2: Link class promotes cultural norms knowledge	Before	4.57 (1.48)
	After	5.58 (0.98)
S3: Link class promotes identification of communication orientation in cultures (high context/low context, direct/indirect)	Before	4.89 (1.39)
	After	5.78 (0.95)
S4: Link class promotes identification of signs of cultural stress	Before	4.43 (1.46)
	After	5.29 (1.32)
S5: Link class facilitates knowledge to support cultural stress	Before	4.32 (1.40)
	After	5.41 (1.13)
S6: Link class facilitates learning partner language and culture	Before	4.64 (1.24)
	After	5.63 (0.92)
S7: Link class makes easy the awareness of cultural differences	Before	5.05 (1.26)
	After	5.76 (1.00)
S8: Link class promotes knowledge of socio-political-historical aspects of own culture	Before	4.88 (1.35)
	After	5.63 (1.11)
S9: Link class promotes knowledge of socio-political-historical aspects of partner culture	Before	4.53 (1.47)
	After	5.35 (1.09)
S10: Link class promotes strategies to adapt to other cultures	Before	4.43 (1.41)
	After	5.49 (1.04)
S11: Link class promotes knowledge of behavior in social and professional areas in other cultures.	Before	4.80 (1.28)
	After	5.70 (0.93)
S12: Link class facilitates contrasting differences in behavioral patterns between cultures.	Before	4.81 (1.41)
	After	5.72 (0.99)

$p < .00$ Before/ After for total column

Note. This table is a personal compilation.

Table 17 provides empirical evidence of the positive effects in students and the effectiveness of the link class through a collaborative methodology and of acquiring intercultural awareness through learning each one of the capabilities from S1 to S12.

In order to know how the link class promotes and facilitates this acquisition, the interventions made in the Peruvian class are explained below:

Students were asked if they were able to cite a definition of culture and describe its components and complexities (S1); the positive responses reported a mean difference of 0.93. During the course, students were taught the conceptualization of culture according to different perspectives and focused on business purposes with a transcultural or cross-cultural approach (Trompenaars, 1993; Hofstede, 1998). The models helped students to understand how different orientation patterns in culture affect each society and organization. Certain classes during the semester focused on understanding the complexities of the differences in national/regional/organizational culture through the analysis of country and company cases, articles and research papers.

To know how the link class promotes cultural norms knowledge, students should confirm through the survey if they knew the essential norms and taboos of the partner culture (e.g. greetings, dress, behavior etc.) The mean difference of S2 is 1.01. When working with a different partner abroad, students must be aware of certain behavior that is considered unacceptable in other cultures. The course includes a topic on "Doing Business Abroad" which details the many factors that affect the smooth negotiations and outcome of a business encounter. For example, in Japan people greet one another with a bow while in other countries greetings are given through the form of a handshake. Through the video conferences, students will have gained a better understanding of the norms and taboos in the partner's culture.

As the link class course is taught in English, all students must communicate in this language during sessions and outside of the class using other mediums. This makes them think about the way to speak to certain people according to the language and makes them

identify the different formal or informal ways to communicate in English Spanish. For example, there is no word in English for "*usted*", the formal "you". S3 asks directly if the student could contrast important aspects of the English language and culture with their own. The mean difference is 0.89.

Experiencing an awkward or problematic situation with the partner university helps the students to recognize signs of cultural stress. The many cultural differences that would impede the flow of a conversation can cause cultural stress but students consequently learn to recognize such stress. S4 stands for the ability to recognize signs of cultural stress and has a mean difference of 0.86. Following this, they were asked if they are able to recognize strategies for overcoming signs of cultural stress (S5), the results showed amean difference of 1.09. As students will have experienced these problems first hand, they will have had to overcome this cultural stress.

S6 tested students by asking if they knew some techniques to aid their learning of the host language and culture. A positive mean difference of 0.99 was reported. The videoconferences are a vital experience for the students to find out about the different ways of learning about other languages and cultures. From the experience, that will no doubt include problems and hard work, students have a deeper knowledge in this field and the experience will serve them in the future.

Contrasting different behaviors is done through observing the actions of fellow students in Peru and examining the actions of students in the partner university. Videoconferences are useful in this way as students are able to physically observe the foreign students despite being in different locations. For example, in terms of time orientation, the partners may be different in the deadlines for certain team-working tasks. Students may agree on a date, but then one group of students may not stick to that date. They are expected

to stay in contact with partners outside of class via email and social media which will also help contrast their behavior in social interactions and basic routines. As part of the course, students need to write a mini-ethnography, comparing the cultures of the two countries. Partners will write about their own culture, explaining their behavior and certain areas of their culture to help students from the partner institution to understand the differences. S7 seeks to know if students could contrast their own behavior with those of their partners in important areas (e.g. social interactions, basic routines, time orientation etc.); the result was a positive mean difference of 0.71.

S8 tests if students could cite important historical and socio-political factors that have shaped their own culture; responses were positive with a mean difference of 0.75. Similarly, S9 asked if they could cite important historical and socio-political factors that shaped their partner culture; the mean difference was 0.82. As part of one of the videoconference sessions, students from both Universidad ESAN and the partner institution had to prepare a presentation on the history and political situation in each of the countries. These presentations are then given via videoconference and followed by a Q&A session. This increases the students' knowledge of the important historical and socio-political aspects of other cultures. Using case studies and articles, students learn about the backgrounds of different countries.

A collaborative discussion session by videoconference helps the students to better understand the partner cultures. Communicating with students abroad via video and text and undertaking joint assignments with partners can make the home students aware of the different learning processes that other cultures might have. For example, partner students may not be as interactive during videoconferences because they are not used to this way of learning, or do not feel confident on their language skills. Another difference is in

assessment which highlights how different cultures have different learning processes (in ESAN students are constantly assessed). Moreover, the case studies, frameworks and articles that are analyzed during class look at the different ways in which people can adjust to foreign cultures. S10 asked students if they could cite various learning processes and strategies for learning about and adjusting to the partner culture, the before–after responses resulted in a mean difference of 1.06.

S11 asked the students if they could describe common interactional behavior among partners in social and professional areas (e.g. family roles, team work, problem solving etc.) and resulted in a mean difference of 0.90. Again, through using articles on real life experiences and case studies of multinational organizations, by the end of the course students will be able to describe common interactional behavior amongst partners. The class includes an article on "Peruvian culture: Family and Economics". The team assignment demands constant communication between students, which clearly helps in understanding common interactional behavior which can be applied to a comparison with their own culture. For S12 responses were positive when asked if they could discuss and contrast various behavioral patterns in their own culture with those in their partner's culture; the responses resulted in a mean difference of 0.99.

5.2.4.6 *Results of Evaluation VI: Global perspectives awareness (Hett, 1993)*

Three new proposed constructs in testing intercultural competence are supported by the theoretical framework of Hett's Global Mindedness Scale (GMS) (Hett, 1993; Carano, 2010).

The results for "ICT media in a collaborative link class supports the development of social values" (α= 0.84) indicate an internal consistency of the items testing students'

appreciation of social and wellbeing for others. The item evaluates responsibility characteristics from which a sense of moral responsibility surfaces for improving the living conditions of people who are in need.

"ICT media in a collaborative link class facilitates cultural understanding and cultural pluralism". A α=0.83 for this new construct was obtained and refers to the effect of appreciation of cultural differences in the world.

"ICT media in a collaborative link class permit students to be aware of challenges to resolving human problems" α=.7. The new variable refers to concerns and attitudes about human world problems that were produced during interactions.

5.2.4.7 Results of Evaluation VII: Cross cultural comparison experience medium with communication partner (Carlson & Zmud, 1999).

This is an analysis of proposition P10: "Students' national culture influences their interest in acquiring cultural competences mediated technology". We conducted a pairwise comparison between different nationalities to know if students' national culture has an influence. The proposition uses constructs which are based on media richness theory (Carlson & Zmud, 1999) (see Appendix N**).**

A new construct is proposed: "Cultural preferences influence the interest level of intercultural competence acquisition mediated through technology". The results revealed differences between Peruvian, French, American and Dutch participants.

Peruvians' positive experience with ICT tools in a link class, and acceptance of technology compared to their partners, do not reflect a high degree of uncertainty avoidance. Peruvians find ICT media easier to use in a collaborative link class than French (mean

difference = 0.832, p = 0.001), medium higher than Dutch (mean difference = 0.763, p = 0.009).

In their narratives, the students reported that they were satisfied with the balance between educational content and international experience. For example, one student said: *"The course of Intercultural Management has been really challenging for me. We had a lot of video conferences with universities from, for example, America and Portugal. We had to gather together with all the people there, in order to experience how it is to work via intercultural media. We had to work together via Skype. We used Skype and e-mail. We created the Google document where we uploaded all our documents."*

Interestingly, that European students reported lower results in preferring and accepting ICT as the method for learning IC is supported by the facts that the European region is more geographically integrated and that students' participation in mobility programs such as Erasmus offers them more opportunities to experience other cultures face-to-face. This compares with Peruvians and Americans who reported the higher appreciation of ICT tools and facilities to learn about IC and who do not live in such geographically integrated regions and where such face-to-face integration comes at a higher cost.

For the following construct, ICT media as suitable to maintain a personal communication style, Peruvian and French (mean difference = .804, p = .002) reported larger differences. Another student commented on the use of ICTs and particularly videoconferences: *"Using video conferences and virtual communication methods has been a beneficial experience for me. Working with people with different cultures is not straight-forward, especially when your classmates are not physically present in the classroom. I found the courses very interesting, and realized that a lot of pre-class preparation is needed for the classes to run smoothly. Learning intercultural theories before starting the video*

conferences definitely helped understand problems that can arise when working with people from different countries."

As to whether students believe using ICT media creates a cold atmosphere, there was a significant difference between Peruvians and Americans (mean difference = 0.942, p = .008). For ICT media as a facilitator for demonstrating human emotions, a significant difference was found between the Peruvians and Dutch (mean difference = 1.000, p = 000) and a higher medium with French (mean difference =.785, p= .002). Theoretical support can be based on the importance for Latin cultures to demonstrate emotions than Anglo-Saxon cultures and the higher appreciation of this capability of the medium.

Other students recognized the value of interaction on a personal level and the impact on their professional development, stating that: *"I mainly enjoyed the course because you compare your country with other countries in the world. You can learn the way every country does marketing, business, and closes business. Also, you can learn values such as respect, and diplomacy as you make deals with them."*

In the case of the new construct of ICT as supporting the development of social values, there is the greatest mean difference (mean difference = .887, p = 000) between Peruvians and Dutch, and a higher medium with French (mean difference = .626 p = .002). Discussing the experience of a link class between Peru and USA in 2013 will illustrate this result: students were asked to work in international teams on an assignment focused on decision-making and resource allocation of donation funding. Most of the responses were about projects to fight against poverty and directed at societal groups that are vulnerable, such as children and the elderly.

5.3 Study 3: Investigating Managers' Participating in a Graduate Program with a Short International Stay Component

5.3.1 Method.

A survey instrument was built in order to proceed with this set of analyses to study managers and their relation to the constructs of their vision of technology to support IC learning (I) and the importance of cultural knowledge (see Table 12). The results will allow us to see if these propositions can be validated:

P11: Managers agree on the vision of technology to support IC learning.

P12: Managers perceive students possessing intercultural competence as important.

5.3.2 Participants

The participants were medium and senior level managers who are alumni of Universidad ESAN Graduate School. They were former students in one of the master programs offered in the Peruvian university where the experiment of the link class was implemented within the bachelor program.

5.3.3 Quantitative data analysis

The study utilizes a quantitative approach based on the questionnaire in Appendix O. The survey consists of 42 questions divided into five parts; the first part gathers data about the characteristics of the manager's study program with regard to studying abroad and training in the intercultural competence component and the second part is to learn about their intercultural experience at work. The following content is based on theoretical frameworks;

the third part assesses culture and education as respondents must choose which one of three statements best defines the management style of the university (Bush, 2006). In the fourth and fifth parts of the survey, participants are asked about their style of management (Hofstede, 1998) and are asked to evaluate style of profession. The sixth part assesses intercultural awareness and appreciation of other cultures according to Hett's Global Mindedness Scale (GMS) (Carano, 2010), the seventh part explores managers' vision of technology (Dennis et al., 2008). Finally, the eighth part of the questionnaire is a description of the profile of the respondents.

The survey was supplied in online and printed formats. For the online survey, we used Monkey Survey software. The survey was launched in October 2014 to more than 5,000 alumni of the graduate school, indicating the aim of the invitation (see Appendix O). Additionally, in order to ensure more respondents in a shorter time the survey was delivered on printed sheets during an alumni event to graduates of the supply chain master's program in October 2014. I personally delivered and collected the surveys among the group of around 120 attendees in this event, confirming individually whether or not they had already completed the online survey. Statistical analysis was carried out using the statistical data package SPSS version 23.0.

5.3.4 Results and evidence

5.3.4.1 Demographics and descriptive statistics

The total data set of 254 respondents were mostly male (71.7%) and the remaining 28.3% were female. The majority of the respondents are MBA graduates (55.3%), 37.5% had studied a specialized master's degree or functional master's degree. Other graduates include bachelor's degrees (3.2%) and other courses offered at the university (4%). The year of graduation ranged from 1969 to 2015, with the years 2013 and 2014 being the most popular

(20.1% and 14.1% respectively). Out of all participants, 46.5% participants were between the ages of 32 and 44, followed by the age group 45 to 59 (33.5%), 14.6% were below the age of 32 and 5.5% were over 60 years old. Out of the three job sectors, the private sector was the most popular with 78.3% of respondents working in this category. The other respondents work in the public sector or in an NGO (20.5% and 1.2% respectively).

The survey asked the respondents to select a category which indicates what role they have in their workplace. Role A indicated a director, executive, or general manager and was selected by 29.9% of respondents. Role B, for a manager, supervisor, or vice manager, was selected by 35.8% and 33.5% selected role C which indicates that they are a specialist, professor, academic coordinator, or have a role which do not adhere to a strict hierarchical position (see Table 18).

The majority of the respondents live in Lima, Peru (89.4%) although there are others living in Trujillo, Peru (1.6%), Arequipa, Peru (1.6%) and Cuzco, Peru (1.2%). Again, the majority are Peruvian (95.7%) with 4.3% of respondents belonging to another nationality. The percentage of respondents who are married is 55.5% with 39% single and 9% divorced. The rest were widowed or living with a partner.

We identified 61.8% of the sample, affirming that they had travelled abroad as part of the study program (N = 157, M = 5.52, SD =.832), most of them to Europe (N = 79, M = 5.55, SD =.837) and South America (N = 30, M = 5.4, SD = 1.04). Asia was also a popular destination with 13.2% having studied there (N = 21, M = 5.55, SD = .69), 4.4% of the respondents had studied in more than 2 continents.

Out of all participants, 63.1% had not taken a course on managing cultural diversity, and 65.7% had no experience of taking courses on cultural diversity outside university. A majority of 81.3% indicated that they had never taken part in an international team project

at ESAN. Also, 69.3% said that they did not use technology to interact with foreign students in courses studied at the university.

With regards to the inquiry about intercultural experience at work, the survey highlights that 57.1% of the participants have not developed an international career involving travel abroad and dealing with foreigners. Results show that there is an equal number of professionals that have travelled abroad for work purposes and those that have not: 50% of respondents answered that they had undertaken business trips, while 50% also stated that they had never travelled abroad for work purposes. Of the 50% that have travelled abroad, 28.3% have travelled within South America for work purposes. Twenty-two percent of respondents had travelled to 2 continents while 18.9% had been to 3 continents for business trips.

Table 18. Results of managers' International Experience according role in their organization

	Role A Director, General Manager	Role B Manager, Supervisor	Role C Analyst, Academic Coordinator, professor
N = 252	76	91	85
Age	*N* = 40(45- 59 yrs), (5.2,*SD* .80) *N* = 26(32-44 yrs),(5.09, *SD*.88)	*N* = 56 (32-44 yrs) (5.51, *SD* 1.07) *N* = 20 (45-59yrs) (5.5, *SD* 82) *N* = 11 (<32 yrs) (	*N* = 35(32-44 yrs), (5.09, *SD*.88) *N* = 25 (45-59 yrs), (5.47,*SD*.92) *N* = 22(<32 yrs), (5.54, *SD* .82)
Travelled 1/. *N* = 157	YES *M* = 1.814 *SD* = .099 NO *M* = 1.604 *SD* = 0.091	YES *M* = 1.5 *SD* = .07 NO *M* = 1.6 *SD* = 0.119	YES *M* = 1.5 *SD* = .007 NO *M* = 1.731 *SD* = 0.112

Note. This table is a personal compilation.
1/.Travelled abroad as part of the study master program

With regards to the opinion of the alumni and managers about their perceptions of the management style at ESAN University, the results of the survey reported that 42.6% of the respondents believe that at ESAN power is shared equally among some or all members of the organization, with the other professionals in the institution also participating in the

decision-making process. A percentage of 38.1% hold the opinion that decision-making focuses on the distribution of power and 29.3% of survey participants think that ESAN is managed by a hierarchical system.

A significant 94.8% responded affirmatively to the question of whether they believe it is possible to learn or train in intercultural competence using a media technology.

5.3.4.2 Factorial analysis

Factorial Analysis was applied to study the data gathered from the alumni (N = 254) in the designed instrument. Results for the set of 14 statements in a 1/7 Likert scale, to test the level of cultural knowledge of the group, reported a *KMO* =.845, DF = 91, p = .000 and α = .872. Statements in the questionnaire were adapted from the survey of Hett's Global Mindedness Scale (GMS) (Carano, 2010). A new factor, cultural knowledge, is based on eight items in relation to the literature as shown in Table 19:

Table 19. New Items in Relation to the Literature

A1. Awareness of signs of cultural shock	Cross cultural business skills Lane and Distefano (1992) International management competence Hodgetts and Luthan (1994)
A2. Awareness of social interaction in the own and in the other culture	Cross cultural sensitivity Laughton and Otewill (2000)
A3. Capacity for doing business with foreigners	Cross cultural business skills Lane and Distefano (1992)
A4. Capacity for overcoming signs of cultural shock	International management competence Barham and Wills (1994)
A5. Capacity to understand other languages	Cross cultural business skills Bigelow (1994)
A6. Awareness of historical-social-political factors in own culture	Cross cultural business skills Bigelow (1994)
A7. Capacity to define culture concept and its complexities	Cross cultural business skills Adler and Bartholomew. (1992) International management competence Barham and Wills (1994)
A8. Capacity to enjoy the behavior of other cultures	International management competence Barham and Wills (1994)

Note. This table is a personal compilation.

The results of the factorial analysis in the principal component (Varimax) indicated that the factor of participants' cultural knowledge explained 19.36% of the variance. Conceptualization and research of IC explains the multiple skills an individual needs to have in order to be competitive as an international manager; these skills are both cognitive and sensorial, including group awareness of cultural differences, adaptability and sensibility skills. According to Lane and DiStefano (1992), Laughton and Ottewill (2000), Barham and Wills (1994), and Adler and Bartholomew (1992), these skills imply being mature, having several years of experience managing and leading teams, and being exposed at least once to a different cultural environment.

Based on the results, we computed two mean scores, namely “culture” and “work value” of ESAN**.** The work value factor of ESAN explained 8.03% of the variance. The theoretical framework for work value is based on the theories of educational management (Bush, 2006). Alumni survey results confirm that the management model in ESAN corresponds to the collegial model; it is a participative leadership model characterized by the rights of the professionals in the decision-making process and assumes a common set of values. When this set of values are positive, v.gr to offer a high level of education to students - this will impact directly in the outcome of the delivery of education.

We asked managers: “*Do you think it is realistic to learn or train in intercultural competence using media technology for interacting with members from another culture?”* and we obtained an affirmative (94.8%).

We looked for their opinion on the appropriateness and support of VC, telephone, chat, e-mail, and face-to-face to train intercultural competence. We applied a test of correlation based on the hypothesis:

H0 = No existing correlation between the two variables

H1= An existing correlation between the two variables

$\alpha = 0.05$

As we can see from the results in the matrix (Table 20), there is statistical evidence with a significance level 0.000 (sig = 0.00) that shows there is a correlation between the variables support via videoconference (VC) and training in IC. There is also statistical evidence with a significance level 0.000 (sig = 0.00) that there is no correlation between support via telephone and training in IC.

The results are supported by media richness theory (Dennis et al., 1999); videoconference ranksas highly for immediacy of feedback as face-to-face communication. Immediacy of feedback in communication is valued as an experiential element during interaction as it facilitates socializing and is an important element during training in IC (Brislin, 1979; Kolb, 1984; Müller-Pelzer, 2009).

The results regarding the scale of appropriateness of synchronous media (α = .759, k = 5) and the scale of media richness (α = .777, k = 4) were used to assess the ICT media perception of participants. These scales have been tested in the past and have a strong reliability (Carlson & Zmud, 1999).

Table 20. Non-parametric Correlations N = (251)

	Training in IC	Support Of VC	Support Of Telephone	Support Of Chat	Support Of e-mail	Support Of face-to-face
Training in IC	1.00					
Support of VC	.000	1.00				
Support of telephone	.167	.000	1.00			
Support of chat	.007	.000	.000	1.00		
Support of e-mail	.050	.000	.000	.000	1.00	
Support of face-to-face	.000	.000	.517	.886	.951	1.00

Note. This table is a personal compilation using survey questions and the Likert scale.

5.3.4.3 Vision on technology

First of all, male participants (M = 1.67, SD = .59) perceived synchronous technology as significantly richer (F (12, 1) = 6.19, p = .014) than female participants did (M = 1.43, SD = .53). This is in line with the literature of MRT (Carlson & Zmud, 1999) and MST (Dennis et al., 2008) and the cultural assumption about media richness that supports the relative

abilities of channels to communicate rich information. Appropriate selection should be made according to the task, which in this situation is the interaction between individuals in different geographical locations. These differences of space are resolved by VC which is ranked as the richest media type (Newberry, 2001) because of its high synchronicity for facilitating convergence and the development of a shared meaning of information (Dennis et al., 2008), both of which are characteristics of IC learning acquisition and training (Brislin, 1981).

Second, the participants who have been using technology in class to communicate with other cultures reported with a significant tendency $F(12.1) = 3.289$, $p = .07$) that they had a greater perception of the appropriateness of synchronous media to interact with other cultures ($M = 5.62$, $SD = .83$) than those who did not ($M = 5.3$, $SD = .86$)

5.3.4.4 Style of profession

The first interaction effect is related to the position of the participants in their organization (role A, B or C) and the fact that they studied abroad as part of their program. The interaction effect is significant ($F(5, 2) = 2.947$, $p = .05$) on their perception of synchronous technology as rich.

5.3.4.5 Culture and education

Third, the participants who have been participating in a course teaching cultural diversity reported a significantly ($F(12, 1) = 8.58$, $p = .004$) greater cultural knowledge ($M = 5.74$, $SD = .69$) than those who did not take these courses ($M = 5.36$, $SD = .86$).

Fourth, the participants who have been taking courses taught in their company relating to cultural diversity reported a significantly ($F(12, 1) = 7.66$, $p = .006$) greater cultural knowledge ($M = 5.79$, $SD = .65$) than those who did not ($M = 5.34$, $SD = .85$).

Finally, the participants who, for professional reasons, developed an international career reported a significantly ($F(12, 1) = 4.2$, $p = .042$) greater cultural knowledge ($M = 5.69$, $SD = .70$) than those who did not ($M = 5.36$, $SD = .87$) have such exposure to other cultures in a professional context.

5.4 Main Findings

Our findings indicate the following support for the research propositions

The main findings of this research are presented in Table 21.

Table 21. Main Findings

Study	Main Findings
Study 1: Faculty Experts Insight Intercultural competence training using ICT in a collaborative model Acceptance of ICT for training in intercultural competence. National differences and values	1. Identification of an insight of intercultural competence among faculty experts 2. Information communication technologies (ICT) are a useful tool to support students in expanding their global perspective and learning intercultural competence. 3. Assessment of intercultural competence is a complex concept that it is not limited to the methods provided by instruments or pre-defined tests. 4. A complete intervention and contextualization is required to train in intercultural competence 5. Cross-cultural courses and experiences are required to train in intercultural competence 6. Factors of personality independent of the national culture influence the learning experience. 7. The link class helps to create in students a non-stereotyping disposition. 8. Intercultural training mediated by technology is a complex task. 9. IC training builds students' sense of worth and value
Study 2: Students Acceptance of media Capabilities. Appropriateness of media Intercultural awareness Intercultural competence knowledge	1. ICT media is not complicated to use, it is suitable to maintain a personal communication style as a result of the experience communicating with partners. 2. Facilitation to identify human expressions and emotions is due richness of videoconference. 3. Identification of videoconferencing to transmit physical, visual and verbal symbols, reflect capability of the media to transmit messages 4. Identification of videoconferencing to craft a message reflect capability to process a message. 5. Reported benefit of the Peruvian intervened link class is the IC knowledge acquisition. 6. Facilitation of the development of social values and cultural values through link class support awareness and appreciation of diverse cultures. 7. Identification of national and cultural differences in the perception of the level and capability of ICT.
Study 3: Managers Vision on technology Culture and education	1. Vision of technology in managers, identifying the appropriateness of ICT to support training in IC 2. Identification of an appreciation of cultural differences in managers who have been exposed to international environments during their study time.

Note. This table is a personal compilation.

5.4.1 Main Findings in the Study of Faculty Experts

The responses from the investigation of 24 international faculty experts have reported a common insight of the meaning of intercultural competence as the capacity to understand other cultures. Faculty experts agree that ICT serves as a medium to train students in intercultural competence.

Detailed findings in the coding analyses of the faculty expert interviewees (N = 24) showed an insight of intercultural competence which is represented by: understanding other cultures (32.5%); developing behavior and values (30.0%); interacting with other cultures (25.0%); and knowledge of other cultures (12.5%). The percentages represent the rate of corresponding responses from the interviews. This conceptualization is supported by the literature review of intercultural competence (Adler & Bartholomew, 1992; Lane & DiStefano, 1992; Barham & Wills, 1994; Bigelow, 1994; Laughton & Ottewill, 2000) that defines IC as the exact cross-cultural capability and cross-cultural business skills that have been reported in our findings.

The study of faculty experts provides evidence that the method using ICT helped students to expand their global perspective in the following ways: through understanding different cultures; through a better appreciation of people and thinking from a different perspective (23.8%); through knowledge acquisition and information about other cultures (19.0%); and through interaction with new people (14.3%). These results are supported by the conceptualization of cultural business skills (Lane & DiStefano, 1992; Bigelow, 1994).

The link class using videoconferencing has been selected by faculty experts as the method to train students in intercultural competence. Faculty experts prefer VC as the richest

tool to support their methodology (35.9%), independent of cultural differences. VC recreates natural conditions for interaction between students in an international setting.

5.4.2 Main Findings in the Study of Students

Our findings from analyzing students have shown differences in the level of preferences for technology according a student's nationality. Peruvian students found ICT easier to use than French or Dutch students. Peruvians also found ICT more suitable for maintaining a personal style of communication than French.

Students reported positive experiences of using media in the processes of communication. The immediacy of feedback provided by videoconference during class was tested and supported by media synchronicity theory (Dennis, Fuller, & Vallacich, 2008).

Based on Hett's Global Mindset Scale (Hett, 1993), we measured Peruvian students' outcome after the link class. Results before and after the class were reported as well as the acquisition of cultural knowledge and awareness. The results indicate a positive difference when analyzing their pre- and post-course knowledge and acquisition of culture awareness. Supported by the theories of media richness and media synchronicity, students found videoconference an appropriate and capable media for transmitting the inherent style of communication and values of each culture.

Peruvians find ICT media easier to use in a collaborative link class than French (*MD* = .832, p = .001) and medium higher than Dutch (*MD* = .763; p = .009).

Peruvians find ICT media more suitable for maintaining a personal communication style than French (*MD* = .804, p = .002). Latin American cultures are more affective and emotions dominate in their relationships compared with more neutral cultures where reason

dominates. SPT supports the sense of being present through VC, the possibility of expressing emotions is revealed as being more important to Peruvian students than French students.

Peruvians find that ICT media can appear to create a cold atmosphere in a collaborative link class more than Americans (*MD* = .942, *p* = .008). Whether a culture is a high context cultures or low context culture impacts on the perception of the media for communicating and Peruvian culture values face to face contact more than Americans.

Peruvians find ICT media facilitates the expression of human emotions in a collaborative link class, more than Dutch (*MD* = 1.0, *p* = .000) and medium higher than French (*MD* = 0.785, *p* = .002).

Peruvians find ICT media supports the development of social values more than Dutch, (*MD* = .887, *p* = .000) and medium higher than French (*MD* = .626, *p* = .002), an explanation for this relates to the characteristics of collectivist countries.

5.4.3 Main Findings in the Study of Managers

The potential of ICT as medium to support IC training is also confirmed through the investigation of a group of managers who have had at least a short international exposition during their time of study with the Peruvian university. Managers recognize the significance of providing IC training to students.

In this investigation we looked at a group of new constructs of cultural mindset (Hett, 1993), culture in education, (Brislin, 1981; Bush, 2006), management practices and style of profession (Hofstede, 1998) and vision of technology (Carlson & Zmud, 1994; Dennis et al., 2008).

The results and evidence demonstrate that these managers had travelled abroad for a short period of their study program (61.8%) (N = 157, M = 5.52, SD = .832). Hett's Global Mindedness Scale (GMS) (Carano, 2010), was applied to analyze their knowledge and acceptance of different cultures. The test reported a significant internal data consistency through a Cronbach alpha of $\alpha = .872$ (sig = 0.00). New items in relation to the literature were identified: awareness of signs of cultural shock, awareness of social interaction in the own and host culture, capacity for doing business with foreigners, capacity for overcoming signs of cultural shock, capacity to understand other languages, awareness of historical-social- political factors in the own culture, capacity to define the concept of culture and its complexities, and capacity to enjoy the behavior of other cultures (Adler & Bartholomew, 1992; Lane & DiStefano, 1992; Barham & Wills, 1994; Laughton & Ottewill, 2000).

CHAPTER 6: GENERAL DISCUSSION, CONTRIBUTION TO RESEARCH, CONCLUSION, FINAL REFLECTION AND FURTHER RESEARCH

6.1 Contributions to Research

This dissertation contributes to the literature in the interdisciplinary fields, of management sciences (particularly management education), cross-cultural studies and information systems. The study's most important findings are primarily on the understanding of a multicultural experiential learning in a Peruvian university and the acceptance and appreciation of ICT (particularly videoconference) for teaching and learning intercultural competence. It is important to emphasize that the results are aligned with the literature where ICT is an enabler rather than a driver of the teaching/learning process (Bhaumik, 2012), our results are supported by the theories of Information Systems. MRT Carlson & Zmud (1999), ICT media are easy to use in a collaborative link class α =.74, ICT media are suitable to maintain a personal communication style. ICT media facilitate the expression of human emotions in a collaborative link class α =.75. MST, Dennis et al. (2008), VC high capability to transmit physical, visual and verbal symbols M = 2.55 SD = .82

Secondly this study presents findings on the acceptance and appreciation of ICT and its different levels according to national differences between students and, thirdly, the evidence that suggests a change in cultural patterns of information technology utilization for Peruvian students.

This research has covered two aspects that have been little explored in the literature: teaching interculturalism in business schools (Blasco, 2009) and the interaction between students from diverse cultural backgrounds using ICT (Johnson et al., 2013a, Bargiela-Chiappini & Nickerson, 2003). Study 1 has covered the analysis of a group of 24 international faculty experts study 2 has covered the analysis of link class participants from

different countries and study 3 Peruvian managers' vision on Intercultural Competence and Information Communication Technology.

Study 2 analyzed the outcome of a technology-mediated multicultural experience between students of different nationalities, particularly Peruvian, Dutch, American and French. The study integrates these results with the literature of cross cultural-studies and the technology acceptance model (TAM) and media richness theory (MRT) from the field of information systems. These theories are important for educators and educational managers but are missing in the literature of internationalization in higher education.

The theory about the impact of cultural environment on the utilization of information technology (Johns et al., 2003) argued that societies with solid uncertainty avoidance are more likely to struggle with the execution and integration of new technology. Our findings in this research report a different result to this argument. Despite being from a country with a high uncertainty avoidance (Peru's Hofstede UA Index/Rank: 87/9), Peruvian students report a positive acceptance and preference of the use of technology in class compared to their partners from countries with lower levels of UA such as the Netherlands (Netherland's Hofstede UA Index/Rank: 53/35) and France (France' Hofstede UA Index/Rank, 86/15-16). Besides this, Peruvians find ICT media easier to use in a collaboration link class than French (mean difference =.832, p = .001) and medium higher than Dutch (mean difference = .763, p = 0.009).

A possible interpretation for these results relies on students' different attitudes towards using technology to learn about other cultures. Attitudes and levels of interest could be influenced by a student's lifestyle and environment which may or may not facilitate interaction with people from different cultures. European students are, on average, more

experienced in travelling and living abroad (both for leisure and study purposes) compared to Peruvian students.

For Peruvian students, two factors influence this difference in being able to interact with other cultures in the way that European students do: limited resources (high cost of tertiary education, scarcity of funds or grants) and geographical reasons (limited possibilities for travelling both in and out of the region). This contrasts to the reality for European students who have more opportunities for face-to-face multicultural interaction and have a greater availability of resources for mobility in higher education (e.g. Erasmus programs).

Interesting findings were reported in our study with regard to patterns in the use of technology when compared with the literature of UA and individualism. According to the literature about cultural dimensions in each society (Brake et al., 1995), a negative relation commonly exists between individualist societies and uncertainty avoidance (UA). This means that individualist societies have a low level of UA because they are characterized by being achievement-oriented, open to bigger risks, innovation and new ideas in order to achieve greater goals. In contrast, collectivist societies where UA is high are less goal oriented and less open to new ideas.

Our study reports different results in the pattern of the use of technology than those that are reported in the literature. Consider Peru's high score for collectivism (Peru's score in the Hofstede Individualism Index/rank: 16/45) and the Netherlands' high score for individualism (Netherlands' score for the Hofstede Individualism Index/rank: 80/4-5). Yet the results in relation to the higher acceptation of technology to learn IC for Peruvian students suggests that Peruvian students have a lower level of UA and acceptance of ICT compared to their Dutch and French partners, even though they are from collectivist societies. We suggest that these results can be explained due the moderated factor of the

level of education of the Peruvian students. In line with literature, Gong et al. (2007) reported that the effects of cultural dimensions on the rate of internet use and access will be moderated by the level of education. Similarly, research from Torres and Jones (2010) which compares business cultures in Peru and the Netherlands would support this new relation based on their research which explains the differences between Peru in the 1970s and 1980s (the time of Hofstede's study) and Peru in the twenty-first century. Peru's recent economic development could serve as a demonstration of the increased risk taken in business environments, reflected in the lower uncertainty avoidance as reported in the most recently educated generation of Peruvians (at least per the results of this cohort of students).

This dissertation coincides with other research streams in information system literature (Daft & Lengel, 1984; Dennis & Valacich, 1999; Williams et al., 2005). Our results in the three studies of students, faculty and managers reported that videoconference is a rich medium as it is able to relay immediate feedback and information due to its synchronicity. This characteristic allows students to experience interconnectivity with other cultures, and therefore creates the conditions needed to acquire intercultural competence. In line with the literature (Laughton & Ottewill, 2000), methods of cross-cultural training are factual, analytical and experiential in multicultural groups.

A fact that could explain Peruvian students' and Peruvian managers' greater preference for videoconference compared to their partners of other nationalities is the classification of Peruvian culture as high context. In high context cultures the way messages and contextual cues are communicated is important to the interpretation of the message, as well as body language and the ability to transmit physical emotions.

New constructs are presented that confirm the suitability of VC to communicate rich information and provide feedback. VC offers conditions for students where they can feel

close to their partners in a similar way to a traditional face-to-face class. These sensorial and physical conditions are required in the learning process to acquire IC (Brislin, 1981; Bhaumik, 2012).

In line with information systems literature, electronic learning spaces, such as the link class, facilitate learning by allowing interaction among students and instructors of different cultural backgrounds (Alavi, 1994). This is confirmed by the results of the study of faculty experts; videoconference is the preferred medium to train students in IC and is useful to support students' acquisition of a global perspective.

Limitations in a study based on interviews are associated with respondent subjectivity and sample bias due sample characteristics of the population, (Johns et al 2002). In our research the faculty experts group are only 24 from different nationalities, different fields, working and living in different universities in several countries but not represent all the countries, neither all the universities that use interactive technology internationally in their courses, in that sense our sample could not be representative of all faculty experts and represent a limitation.

However we fulfill in our research to faculty experts the exploration phase. We were able to test and contrast with the literature review our results of the insight of Intercultural Competence and our qualitative analyzes become robust with the support of the data analysis text.

To obtain the results of IC acquisition a complete intervention and contextualization was required; the intervention was achieved by a combination of teaching methods implemented which includes factual, analytical and experimental methods (Laughton & Ottewill, 2000). We argue that an expanded definition of distance education could include

collaborative methods of teaching and learning in electronic learning spaces as has been developed in the link class.

With regard to the results for American students, no greater differences were found compared to Peruvian students in their acceptance of ICT. A possible interpretation is that American students and Peruvians share same interest level to learn about other cultures mediated the technology compared with European students.

In answer to the question of if interaction of IC knowledge and ICT can be rigorously tested, our study provide positive evidence from the quantitative and qualitative study. Other studies (Obrien & Erikson, 2008) also reported positive results based on a quantitative and qualitative analysis for a technology-mediated class collaboration. In Obrien and Erikson's study (2008), faculty in Stanford University, California collaborate with Orebro University in Sweden on a project to prepare students for global citizenship. It is important to note that, in this study, the curriculum of the analyzed course "Developing Intercultural Competencies through Collaborative Rhetoric" utilizes a method which focuses on a rhetorical approach and conceptualizes global citizenship as a developed intercultural capital in the participants. A different approach is used in the link class that is mainly oriented around the discussion of topics related to the impact of cultural differences in the environment of international business.

The outcome of students' intercultural competence is the dependent variable in our model. It should be noted, however, that the conceptualization of IC does not have a singular accepted definition. The outcome should, then, be interpreted according to the different perspectives of the different scientific schools of thought, the "Interculturalists" and the Anthropologist/Ethnologists approach. The Interculturalist approach defines IC as a transcultural (cross-cultural) competence to generate prognostic knowledge for business

people (Adler & Bartholomew, 1992; Lane & Distefano, 1992; Barham & Willis, 1994; Laughton & Otewill, 2000). The Anthropologist/ Ethnologists approach (Triandis, 1977 cited by Gröshke & Bolten, 2012) is mainly interested in understanding the uniqueness of culture.

Given this, the findings of the link class case study in higher education has served to understand and improve the knowledge of multicultural experiential learning, with the support of ICT, and is recommended as a potential resource for internationalization at home.

6.2 Implication for Practice

With regard to the field of management education research, this study contributes in several ways. First, it examines antecedents of internationalization in higher education and its implication for Peru in terms of being an emerging economy predominantly exported-oriented and promoting international business. It is the responsibility of universities to educate professionals in being competitive in the globalized current labor market and for adopting sustainable methods of teaching and learning IC which are available for all.

High expectations to acquire intercultural competence through international mobility (i.e. based on experience abroad) have been presented in the literature of internationalization in higher education. But the materialization of this acquisition through studying abroad remains difficult for all students due to limitated resources in both Peru and in other regions worldwide. But good news arise as ICT has become an enabler and an important tool to promote IC for cross cultural training in higher education, as state in Bremser & Olivos (in-press) “The advantage of the semester-long course with work in cross-cultural teams via

mediated technology was that it provide students with real-life experience with international business" p.9

This study allows faculty, stakeholders and educational managers to understand the feasibility of ICT to enhance the learning process in a multicultural environment. This study contributes to the field of educational management by providing a sustainable and alternative approach of campus-based internationalization. All students can benefit from such an approach, not just students in institutions located in the Latin American region (who face a higher cost of education) but also students in developed countries, of whom few experience living and studying overseas despite the relatively low cost of education (Murakami & Blom, 2008).

Finally in terms of expenses, the link class offers an opportunity to those students who can´t afford to participate in an exchange program.

The positive vision of ICT in managers and the positive responses to the question of how important it is to train young students in IC can be explained as an effect of the trends of international business environment. The international exposure of these participants during their graduate study program at ESAN, although a short program abroad, confirmed the results of the analysis. The international experience and exposure was characterized by typical international business trips, visiting companies, meeting peers and attending lectures and conferences when abroad. This experience gives managers of this cohort of the graduate alumni of the Peruvian university an awareness of cultural differences.

During the link class, the Peruvian cohort were provided with practical cultural knowledge to develop behaviors and were exposed to a rich medium of mediated technology to experience other cultures (Brislin, 1981). Peruvian students reported positive results in the before-after participation analysis. These results are in line with the literature of methods

of training IC for students who demand an experiential component so they can develop in global business environments (Brake et al., 1995). Same way in regards of understanding Intercultural Competence as a life-learning process.

6.3 Conclusion

Supported by the theories presented and findings in the studies, we can fulfill the overall aim of this study and response our central research question: how does a multicultural experiential learning that is technology-mediated through the use of ICT become a potential resource for student's intercultural competence acquisition?

We have come to the conclusion that information communication technology supports multicultural learning and intercultural competence acquisition by way of the link class method to produce the outcome of IC. This conclusion is based on empirical evidence from analyzing students, faculty experts and managers which has permitted us to affirm a causality effect of internationalization at home.

We tested our propositions and answered each sub-question. (P1) Faculty experts agree on a common insight about intercultural competence. The common insights is understanding other cultures and develop behavior and values, those are the descriptive labels from our qualitative study representing 52.5% of responses highlighting. (P2) Faculty experts agree that multicultural experiential learning help students to expand their global perspective and this is expressed through a better appreciation of people, think from a different perspective, knowledge of other cultures and interaction with new people, 57.1% of respondents highlighting. (P3) Faculty experts prefer VC to support's students training in IC, and we obtained a 35.9% of frequencies of responses based on usefulness and utility of the media. (P4) There is no consensus for how to assess IC, it is a complex concept not limited to the methods provided by instruments 28.6% highlighting, pre-defined tests, 21.6%, and it is

difficult to measure 17.9%. (P5) Faculty experts agree on the fact that national differences influence the learning experience, but main influence is student's personality, 69.6%. (P6) Student's acceptance of ICT capabilities during the link class is independent of their national differences, expressed in the confirmation of the theories of MST, Dennis et al. (2008), high capability to transmit physical, visual and verbal symbols $M = 2.55$ $SD = .82$, VC medium high capability to process again a message $M = 2.30$ $SD = .738$, VC medium high capability to craft a message $M = 2.27$ $SD = .756$. (P7) Students agree on the opinion of the appropriateness of ICT for communication with partners, MRT Carlson and Zmud (1999) ICT media are easy to use in a collaborative link class $\alpha = .74$, ICT media are suitable to maintain a personal communication style $\alpha = .75$. (P8) An outcome of IC knowledge in students is obtained in an intervened class (Peruvian). Intercultural knowledge, and awareness acquisition Fantini (2006), the Items S1 to S12 in table 17 all show positive differences Before/ After, $P < .000$ in all items. (P9) Students develop social values and an appreciation of cultural differences in a link class. ICT media in a collaborative link class, support development of social values $\alpha = .84$, facilitate cultural understanding and cultural pluralism $\alpha = .83$, permit students to be aware of the challenges to resolve human problems $\alpha = .7$. (P10) Students' national differences impact on their interest in acquiring cultural competences. Our findings confirmed impact of national differences through a Cross Cultural comparison analysis. (P11) Managers agree on the vision of technology to support IC learning and (P12) Managers perceive students possessing intercultural competence as important.

6.4 Final Reflection and Further Research

It is without a doubt of great importance for policy makers and decision makers in educational management to understand the characteristics of their local culture, along with other factors such as the impact of ICT in this globalized world. Beside the challenges and opportunities that their graduates will face in the international globalized market, they should be aware of the local culture and the dominant behavioral characteristics in order to avoid misunderstandings in the communication process, both face-to-face and when they use technology or online mediums.

In order to implement the strategy of campus-based internationalization in higher education, some nuances should be taken into consideration and some necessary requirements should be fulfilled. One of the most important aspects has to do with access to telecommunications, electric power and bandwidth infrastructure (St. Amant, 2007) needed to connect to the online environment, which is particularly important in developing nations. Instructors should be trained in how diverse international factors could affect students' learning, such as different time zones, language barriers and cultural differences. An analysis of the type of medium in terms of adaptability and the task is also of significant importance. According to Chen, Hsu, & Caropreso (2006), the creation of a learning context is needed that supports communication and collaboration based on a robust pedagogical insight and management. They state that "designers and instructors of cross cultural online learning should become familiar with the need for cultural awareness and sensitivity, and the potential influences of effective communication and collaboration on learning resulting from appropriate training" (Chen, Hsu, & Caropreso, 2006, p. 20). In the same way that the analysis of the type of medium in terms of adaptability and the type of task is important,

considerations of media richness for different cultural characteristics in communication are also significant, given the importance of social context cues (Setlock, Quinones, & Fussell, 2007).

The introduction of the method into higher education should consider that challenges can arise regarding potential teachers as, generally, teachers are reluctant to exert the extra effort needed for this teaching activity (Rutkowski, Vogel, van Genuchten, & Saunders, 2008). In terms of ICT competence and its integration into education, the results of a study by Drent and Meelisen (2007) reveal the direct effect of "personal entrepreneurship" on the innovative use of ICT as an endogenous factor; educators develop their ICT competence based on the educational goals they want to accomplish.

However, cultural differences affect the process of learning and utilization of ICT in different ways. Further investigation could be done integrating students learning styles according national differences to improve cross-cultural training.

ICT utilization can never be separated from human intelligence and human sensibility. Although the availability of the tools facilitates communication across almost the entire world, because of the complexity of human beings there is no guarantee that the interaction between individuals will be free of misunderstandings or misinterpretations. Furthermore, it is important "to focus on bringing people to realize that there are different equally valid viewpoints and ways of doing things, and that culture can be one of the factors responsible for the differences" (Richards & Bilgin, 2012, p. 31). As such, educators and decision makers should be aware that it is better to provide students with the experience to learn from other cultures and deal with uncertainty in the low-risk and safe environment of a classroom.

Educational managers and faculty experts have a huge responsibility as they hold the power in deciding what kind of education will be provided for future generations. They are responsible for what values are delivered through education (Moosmayer, 2012) in terms of the knowledge and awareness of cultural differences. The implications of ignoring this responsibility would be significant in producing serious disadvantages, not just in economic terms, such as business effectiveness, but worse still, the implications could have a dramatic negative impact on the wellbeing of society.

The results of the studies are encouraging. The future for internationalization at home is bright but it warrants more attention and research to reach its full potential. Further research should be done to assess the impact of training in other specific skills and to look for creative and innovative approaches that are sustainable so as to deal with limited resources.

Although higher education institutions, especially universities, are resistant to change, Garrison & Kanuka (2004) stated that the early success of blended learning is due to the fact that the approach can preserve the values of higher education. This research serves as a foundation for educational managers and for instructors to internationalize curricula to promote opportunities for international networking and cooperation. The added value is to provide a sustainable teaching method supported on information communication technologies. According to Suh, Shin, Ahuja, & Kim (2011), it is important to contribute to the understanding of the constraints and the joint effects of technology and geographical and organizational boundaries.

EXECUTIVE SUMMARY

This research, developed in the field of internationalization in higher education, has identified a problem provoked by the limitation of international mobility and the high expectations to acquire intercultural competence as a result of studying and living in a foreign country. (Chapter 1)

The research aim that guides this study is to understand and improve the knowledge of multicultural experiential learning with the support of a link class in order to produce in students the outcome of IC. The study seeks to know whether, after participation in the class, students have acquired cultural awareness and intercultural competence and the use of ICT as a potential resource for internationalization at home in universities. This study considers the Peruvian context and the requirements for young professionals in the field of management and international business to hold IC. (Chapters 1 and 2).

The link class is a collaborative method of teaching and learning implemented in a Peruvian university with the utilization of ICT has been undertaken in collaboration with universities abroad for six consecutive years since 2009. An illustration of various experiences of the link class between different partners is presented, showing the possibilities for teaching collaboration (chapter 2).

Research method applied is Case study and Triangulation. We investigate faculty experts to know insight of IC, teaching methods; to do this we interviewed 24 faculty members of 14 different nationalities. We study the vision of Peruvian managers in regards to the importance of training the current young generation of professionals in intercultural competence using technology. The study uses both quantitative and qualitative research methods (chapter 4 and 5).

This research concludes (chapter 6) presenting Contribution to research, implications for practice and final reflections

Our conclusions at the level of the faculty experts is the identification of an insight of intercultural competence as the understanding of other cultures and adaptation of certain behaviors and values for effective intercultural interaction. Videoconference according to faculty, provides the elements required for teaching such as the contextualization required to complement the cognitive, emotional and experiential factors of learning.

Our conclusions at the level of students reports ICT as a suitable medium to maintain personal communication with partners, confirming the richness of videoconference. The study confirmed that Peruvians acquired IC and also revealed national differences in the appreciation of the level and capability of ICT. These differences are explained based on the literature of cultural values in relation to IT.

Positive results were obtained in the study of managers, represented by ESAN alumni; managers agree with the importance to train young professionals in IC and agree in the vision on technology for supporting teaching and training of IC skills.

The implications for practice suggest that ICT is a sustainable and potential resource for internationalization at home. Evidence in this dissertation has demonstrated that it is possible for more students to benefit than through traditional internationalization strategies. In order for this to be realized, however, space for faculty teaching collaboration using ICT should be provided and supported. Further studies on the implication of cultural values for technology acceptance in teaching are also encouraged.

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APPENDICES

Appendix A: References to globalization in the mission statements of AACSB member schools

Category	Specific Topics Referenced in Mission Statements
Global nature of business	International trade of good and services Economic tntegration Inherently ¨international¨ nature of various disciplines
Global market for talent	International networks of business professionals Labor mobility Need for ¨global leaders¨ Role of developing economies Transition to knowledge economies
Need for intercultural awareness	Social constructs Values (personal and professional) Leadership styles Communication styles
Global Higher Education Landscape	Institution's unique role/ contribution in a global context Global benchmarking and competition Opportunities for international collaboration

Source: Report of the AACSB Globalization of Management Education Task Force: Changing International Structures, adaptive strategies and the impact on institutions. Emerald Group Publishing Limited 2011

Appendix B: Scholarships awarded per year per country: Platform for Student and Academic Mobility of the Pacific Alliance.

		Total 2013	Total 2014	Total by modality	Total by country
Mexico	Undergraduate	66	84	150	176
	Doctorate/Research/Teacher Mobility	10	16	26	
Chile	Undergraduate	76	80	156	186
	Doctorate/Research /Teacher Mobility	11	19	30	
Colombia	Undergraduate	49	85	134	147
	Doctorate/Research/Teacher Mobility	4	9	13	
Peru	Undergraduate	35	92	127	136
	Doctorate/Research /Teacher Mobility	3	6	9	
TOTAL PER CALL		254	391	645	

Appendix C: Ranking Top International Universities and Business Schools Using Online Learning Methods

Institution / Ranking	Online Learning Program
Harvard Business School, Boston U.S. #3 Top SSRN Ranking U.S. Business Schools	The MBA Program: http://www.hbs.edu/mba/academics/curriculum.html Curriculum is split into two different learning experiences: The Required Curriculum (RC) forms the first year of study and establishes a common foundation in the fundamental practices of several areas. The Elective Curriculum (EC) follows the RC's breadth of experience with an opportunity for depth, breadth, or both. Each room is fitted with multimedia technology for introducing video, videoconferencing, presentations, and live web-based material into case discussions. With the use of voting technology at each seat, professors can gather real-time feedback from students.
IESE Business School of the University of Navarra, Madrid Spain #1 Top SSRN Ranking International Business Schools	Coaching Directive: http://www.iese.edu/es/ad/EnfocadosWEB/0910/CoachingProfesional/CoachingProfesional.asp Enable managers to develop directive competition and deploy it internally in their organizations. The program will run through three modules: The person and the development of skills (face-to-face), Development of the competence of coaching (coaching on-line virtual) and Techniques of coaching (face-to-face). The methodology combines case studies, lectures, role-plays, and a virtual module with on-line coaching.
New York University (NYU) - Leonard Stern School of Business, New York U.S. #1 Top SSRN Ranking U.S. Business Schools	M.B.A. Program in Information Systems - Course: Electronic Communities http://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/academic-departments/ioms/academic-programs/information-systems/mba-program/ Provides a crucial part of business education necessary for students seeking careers in a variety of industries, from finance to management consulting. The format of the course is blended, course meetings are held in the classroom in addition to scheduled real-time online meetings.

London Business School, London United Kingdom #2 Top SSRN Ranking International Business Schools	Custom programmes for organizations: http://www.london.edu/programmes/executiveeducation/customprogrammesfororganisations.html LBS design and deliver customized programmes for groups of executives in organizations around the world as people react to different learning styles, we combine an array of "blended learning" to deliver a professional development experience. Our virtual learning environment is tailored to your needs - whether you need virtual teamwork, business project work or a virtual learning community within your organization.
University of Toronto, Rotman School of Management, Toronto Canada #5 Top SSRN Ranking International Business Schools	Online curses: http://learn.utoronto.ca/courses-programs/online-distance-learning/online-and-self-study-distance-pdf-learning-opportunities/online-and-distance-pdf-courses Allow professionals to take charge and better manage your own learning experience. Our online courses do more than bridge distances – in a knowledge economy and era of widespread digital communication, online learning brings together communities of collaborative learning and experience.
University of Pennsylvania - Wharton, Pennsylvania #4 Top SSRN Ranking U.S. Business Schools	All MBA Programs are included (all of them could be taken on-line): http://www.wharton.upenn.edu/mba/admissions/mba-decision.cfm
University of Virginia (UVA) - Darden School of Business, Virginia U.S. #11 Top SSRN Ranking U.S. Business Schools	MBA for Executives: http://www.darden.virginia.edu/web/executive-mba/program-format/home/ The curriculum and program structure are designed for experienced managers who want to develop the business and leadership skills needed to advance their careers — all while continuing to work full time. Approximately one-third of the Darden Executive MBA core curriculum is delivered via distance learning in the following ways: Online Classes, Virtual Group Meetings and Exams.

INSEAD, Fontainebleau France #8 Top SSRN Ranking International Business Schools	Be innovative: http://www.inseadonline.com/course_modules/course12/index.cfm#desc This course will make you understand why innovation is becoming increasingly one of the most important values in our society. This course is online.
	Generating Organizational Buy-In: http://www.inseadonline.com/course_modules/course13/index.cfm This course will help you to understand the challenges of implementing change within organizations Participants learn by doing this change management simulation which is based on real life scenarios. This course is online.
Warwick Business School, Coventry U.K. #26 Top SSRN Ranking International Business Schools	Distance Learning MBA Online: http://www.wbs.ac.uk/events/2012/08/23/Distance/Learning/MBA The Programme Manager will be joined by a member of the admissions team and a student or alumnus via our wbsLive classroom which not only allows you to ask questions of the presenters but also enables you to interact with other delegates.
Cornell University - Curtis Johnson Graduate School of Management, New York #20 Top SSRN Ranking U.S. Business Schools	Cornell-Queen's Executive MBA: http://www.johnson.cornell.edu/Executive-MBA/Cornell-Queens-Executive-MBA.aspx The Cornell Executive MBA Program combines the rigor and depth of a traditional MBA program with the general management curriculum and weekend format of an executive degree program. This program is delivered via multi-point videoconferencing to boardroom sites in select cities across the US and Canada
University of California, Berkeley - Haas School of Business, California #10 Top SSRN Ranking U.S. Business Schools	Data & Decisions: http://www.haas.berkeley.edu/haas/about/onlinelearning/ Taught by Lecturer Greg La Blanc, is a prerequisite for the school's Evening & Weekend MBA Program.
	Power & Politics: http://www.haas.berkeley.edu/haas/about/onlinelearning/ Taught by Associate Professor Cameron Anderson, is an online course that will be offered to Full-time and Evening & Weekend MBA students this coming fall

University of Aarhus, Aarhus Denmark #12 Top SSRN Ranking International Business Schools	MBA - Full Time: http://executive.au.dk/mba/fulltimemba/ The teaching and learning techniques of the Full-Time MBA combine the best of our academic and corporate connections characterized by a body of the best international faculty, also guest speakers from a variety of global and local companies. The methodology includes lectures and tutorials, case studies and student presentations, self-study and active class participation and group work and online discussions.
Northwestern University - Kellogg School of Management, Illinois U.S. #13 Top SSRN Ranking U.S. Business Schools	(MBA Part time program) Math Boot Camp: http://www.kellogg.northwestern.edu/PTMBA_Intranet/academics/core_prep_courses.aspx#Math Covers key mathematical concepts and previews where students will see math concepts applied in core courses.
	(MBA Part time program) Accounting Essentials: http://www.kellogg.northwestern.edu/PTMBA_Intranet/academics/core_prep_courses.aspx#Math Online Accounting Essentials covers key accounting concepts and serves as an introduction for those students who have little or no prior training in accounting.
City University London, Cass Business School, London United Kingdom #10 Top SSRN Ranking International Business Schools	Executive education: http://www.cass.city.ac.uk/ Our programmes are delivered using a range of methods, modules and structures, all selected and put together to work around your busy work schedules. Whether it be face-to-face teaching, interaction through our unique Virtual Learning Environment, or a combination of different approaches, Cass Executive Education's programmes are all designed to place you at the centre of a learning environment that is stimulating, engaging and effective.
IE Business School (Spain) Top 12 in the Financial Times: Global MBA Ranking 2015	Executive MBA: http://www.ie.edu/business-school/degrees/executive-mba-english/ The blended format of the Executive MBA delivers an innovative design allowing participants to balance their education with the obligations combining online and face-to-face periods, connecting professionals who strive for top quality education.
	IE Business School's Global Master in Finance (Top-ranked): http://www.ie.edu/business-school/degrees/masters-finance/programs/global-master-finance/ Combines face-to-face and online periods. The program is designed for professionals seeking to acquire a working knowledge of financial markets and corporate finance.

Duke University - Fuqua School of Business, North Carolina #8 Top SSRN Ranking U.S. Business Schools	Global Executive MBA: http://www.fuqua.duke.edu/programs/duke_mba/global-executive/program-format/distance-learning/ Sixty percent of classroom time takes place face-to-face during residencies in the US, Asia, Europe, and the Middle East and 40 percent of class time is done during distance periods, which helps you balance work, school and life obligations simultaneously.
University of Cambridge - Judge Business School, Cambridge United Kingdom #11 Top SSRN Ranking International Business Schools	The Postgraduate Diploma in Entrepreneurship: http://www.jbs.cam.ac.uk/programmes/diploma_entrepreneurship/programme/index.html Offered on a part-time basis over 12 months. It runs as a series of four distinct and assessed courses, all of which must be successfully completed. The remainder of the Postgraduate Diploma in Entrepreneurship is delivered online, using a Virtual Learning Environment (VLE) that enables students to learn both collaboratively and flexibly.
Ohio State University (OSU) - Fisher College of Business, Ohio U.S. #21 Top SSRN Ranking U.S. Business Schools	Executive education: Lean Six Sigma Master Black Belt Certification: http://fisher.osu.edu/executive-education/open-enrollment-programs/operations-and-information-technology/lean-six-sigma-master-black-belt-certification/ The program design employs a Blended Learning model that incorporates world-class instruction delivered in both the classroom and online. The training program covers the Master Black Belt body of knowledge and topics ranging from advanced DOE to Leading Change to Finance for Master Black Belts.
University of Texas at Austin - Red McCombs School of Business, Texas #14 Top SSRN Ranking U.S. Business Schools	Master Professional Accounting (MPA): http://www.mccombs.utexas.edu/MPA/Traditional-MPA/Curriculum-home.aspx MPA coursework is carefully crafted to prepare you for a career in public accounting, industry, not-for-profit organizations, consulting, financial institutions and academe. The undergraduate courses are pre-enrollment requirements for the Texas MPA program and should be completed with a passing grade prior to applying for admission. These courses may be completed at any degree-granting, accredited 4-year university or community college either via a traditional classroom or online course.

University of Michigan at Ann Arbor School of Business, Michigan #9 Top SSRN Ranking U.S. Business Schools	The Michigan Ross Executive MBA Program: http://www.bus.umich.edu/Admissions/EMBA/format.htm Michigan Ross offers a world-class MBA in a flexible format that allows you to integrate studies with your existing personal and professional commitments. EMBA curriculum is augmented with distance learning throughout the program. You'll be engaged – wherever you are – via online collaborations, Mediasite lectures, streaming video, interactive case studies, team-based simulations, and online exams.
Maastricht School of Business and Economics, Maastricht Netherlands #32 Top SSRN Ranking International Business Schools	Introduction to Political Science: http://mgsog.merit.unu.edu/education/onlinecourses.php?cat=political_science The course 'Introduction to Political Science' provides a rigorous introduction to the foundation, structure and operation of world politics. The duration of the course is 10 weeks, split in 5 learning modules. All learning modules consist of online lectures, tutorial supervision, and weekly assignments.
	Diploma in Business: http://www.monash.edu.au/study/coursefinder/course/1834/ This diploma is designed to provide a pathway to further study at Monash including our globally-recognised Bachelor of Business and Commerce. This is part of the most popular online learning programs.
University of North Carolina - Chapel Hill, North Carolina #17 Top SSRN Ranking U.S. Business Schools	Online MBA@UNC: http://onlinemba.unc.edu/academics/academic-overview/ They developed an online MBA program that offers the greatest amount of flexibility without sacrificing standards. It's the same world-class faculty, rigorous curriculum and top-caliber student community of our on-campus programs offered in a way that fits your life. The program is online.
Boston College - Carroll School of Management, Massachusetts #26 Top SSRN Ranking U.S. Business Schools	Online Course Evaluations: http://www.bc.edu/offices/stserv/academic/online_course_evals.html/ Course evaluation results are used by faculty to improve teaching, and they are a significant component in the promotion and tenure process. Online course evaluations will be administered two weeks before the end of the final examination period and will close the day after the last final exam.

University of Arizona, Arizona U.S. #49 Top SSRN Ranking U.S.	Enterprise Security (online): http://mis.eller.arizona.edu/bulletin/2010/sept/images/enterprise_security_certificate.pdf The courses focus on the need to identify, assess and remediate information security risks while increasing the assurance of information, privacy and security overall. This course is online
	Information Security Risk Management (online): http://misonline.eller.arizona.edu/courses/516.asp This graduate certificate program course examines the principles of computer and information security, information assurance (IA), the range of cyberthreats to organizations, TVA (threat-vulnerability analysis), IA risk management strategies, Info security countermeasures and business contingency planning. This course is online.
	Information Security in Public and Private Sectors (online): http://misonline.eller.arizona.edu/courses/515.asp This course exposes the student to a broad range of computer systems and information security topics. It is designed to provide a general knowledge of measures to ensure confidentiality, availability, and integrity of information systems. Topics range from hardware, software and network security to INFOSEC, OPSEC and NSTISS overviews. This course is online
Moscow State University, Moscow Russia Top 100 Shanghai Ranking University (#1 in Russia National Rank)	Master of Business Administration (MBA): http://www.msu.ru/study/dopobr/ MBA course takes 1 or 2 years, depending on the study mode chosen. Courses are divided into modules; the stress is on students' self-guided work and practical implementation of professional knowledge they gain. Modern teaching methods, including interactive tuition and computer-aided methods are widely used.
Thunderbird School of Global Management #4 "Top MBA Online Programs" QS Distance Online MBA Rankings 2015	Thunderbird Executive Education Program: http://www.thunderbird.edu/executive-education/about-us The heart of our business is helping our clients fix issues, or deliver strategic priorities, that they otherwise could not do by themselves. Our best work is on problems or strategies that have messy global aspects. We believe blended learning is best. When used appropriately, technology applied to learning creates efficiencies in cost and time, as well as creates skills in learners that are crucial for success in business today.

East Carolina University Top 200 U.S. National Ranking - U.S. Report	Master of Arts in Education (MAEd) in Instructional Technology Program: https://www.ecu.edu/cs-educ/msite/upload/maed_brochure_July_2012.pdf Designed with working adults in mind, is presented completely via the Internet, allowing students to earn a Master's degree without having to choose between their education and the obligations. The MAEd in instructional technology program prepares candidates to plan, implement, and evaluate effective technology programs in P–12 education. It leads to North Carolina licensure for computers in education and is particularly valuable for educators seeking positions as technology facilitators, coordinators, or directors in public schools.
Tilburg University Netherlands #3 SSRN Top 1,000 Economics Departments & Research Centers (#13 in the Netherlands National Rank)	The HKNet Project applied to Full-time MIS students: The HKNet project consisted of existing academic courses in software engineering, informatics and management (MBA). The goal of the project was to make a valuable contribution to the knowledge of its participants by letting teams collaborate on a joint project on a specific IT-related subject resulting in a joint report. Students formed their own local team consisting of three to five team members. Thereafter, local teams were allocated to global teams, each with a specific assignment.
University of Lisbon Portugal Top 300 Shanghai Ranking University (#1 in Portugal National Rank)	Master in Business Administration (MBA) - Online: http://www.gradschools.com/graduate-schools-in-portugal/online/university-lisbon/mba-master-in-business-administration-201047 Our Program provides the students with the knowledge and general framework of modern management, while developing leadership and decision-making capabilities. In addition, we offer several specialization areas allowing the students to complement their previously acquired knowledge.
Eindhoven University of Technology Netherlands Best university (of technology) in the Netherlands - Elsevier and the Keuzegids Universiteiten 2015	The HKNet Project: Full-time Industrial Engineering and Innovation Sciences Undergraduate Program. https://www.tue.nl/en/university/departments/industrial-engineering-innovation-sciences/ http://www.researchgate.net/publication/221408789_The_HKNET_Project_E-Collaboration_and_Virtual_Team_Identity Industrial Engineering is a study program in which you examine a business process from the perspectives of people, engineering and organization. You develop a thorough theoretical basis and pay great attention to the practical applications of this knowledge.

City University of Hong Kong Hong Kong Top 300 Shanghai Ranking University (3-4 in Hong Kong National Rank)	The HKNet Project: Masters of Science in Electronic Commerce (MScEC). http://www.cs.cityu.edu.hk/academic/msec/aims.html This programme aims to produce a new generation of information technology (IT) professionals who will be competent in evaluating and developing electronic commerce systems and services within a business context. This program is part of the HKNET Project.
Brigham Young University Top 400 Shanghai Ranking University (103-125 in U.S. National Rank)	Teacher-Led Online Courses: http://is.byu.edu/site/about/coursetypes/tl.cfm Our teacher-led courses include all the virtual learning benefits of our self-paced online courses. In addition, many of these courses offer opportunities for students to interact with each other, their course instructors, and/or TAs through various learning activities. This interaction enables deep learning, rich assessment, and greater intellectual growth.
University Strathclyde, Glasgow Scotland Top 300 - World University Ranking 2015/2016	Leadership Development Programme (LDP): http://www.strath.ac.uk/business/undergraduate/courses/ldp/ The LDP is a core element of the undergraduate BBA degree programme in the Strathclyde Business School. The programme is two years in length and provides students with a learning environment through which they develop business and commercial awareness alongside graduate employability skills. The programme adopts a blended learning approach and is based on social constructivist and experiential learning principles.
	Post-Graduate Adult Guidance Certificate/Diploma: http://www.strath.ac.uk/humanities/courses/education/courses/mscpgdippgcertadultguidance/
University of Pforzheim Germany Top 2 German Universities of Applied Sciences-WirtschaftsWoche 2014	The International Study Program: https://www.hs-pforzheim.de/en-US/Business-School/Advanced_Qualifications/ISP/Seiten/Inhaltsseite.aspx The ISP is an integrated course platform, provided by the Pforzheim University's Business School, offering courses for exchange students from partner universities and for students enrolled in a Bachelor's degree program at Pforzheim University's Business School who are interested in taking courses taught in English.

Istanbul University Turkey Top 500 Shanghai Ranking University (#1 in Turkey National Rank)	Open and Distance Education Program: https://egitimdeyapilanma.istanbul.edu.tr/akademik/index.php?page=altbirimler&&birimid=598&&dil=eng
University of North Carolina Wilmington, North Carolina U.S. #53 Best Online Education Programs U.S. Ranking	Secondary Education - Cross-Cultural Collaborative Online Learning: If You Build it, Will they Come? http://www.gpejournal.org/index.php/GPEJ/article/viewFile/46/pdf Implementation of the Cross Cultural Online Collaborative Learning (COCL) in the Secondary Education, Department of Instructional Technology. Implementing the COCL model to design an online course for U.S. and Chinese college students' collaborative learning delivered through Blackboard Vista.
Shaanxi Normal University (China) Top 100 China Universities - International University Ranking	The Open Course Resources Sharing Platform (Online Learning Courses) http://openc.snnu.edu.cn/ Serves as a platform for learners' easy access to courses in social studies, economics, finance, chemistry, education, psychology, management, computer science, etc., offered by institutions such as Yale University, Stanford University, Harvard University, Beijing Normal University, as well as Shaanxi University.
Catholic University of Fu Jen (China) Top 1000 - World University Ranking 2015/2016 Top 3 Taiwan University - International University Ranking	Campus Information Network http://www.studyintaiwan.org/~FJU Fu Jen is actively promoting an E-campus and improving the computer literacy of its faculty and students. It has installed GIGA, optical and WIFI networks to facilitate research and teaching. Aside from the general computer labs, many departments and graduate institutes maintain labs geared towards their special academic and research purposes. Through the ADSL service of Chunghwa Telecom, internet service is available in each dormitory. The major information systems which are developed include on-line registration, library circulation, class evaluation and an activity bulletin board. The university also offers a good variety of internet courses.
Ryukoku University Japan #26 Japan - International University Web Ranking	Japan Exchange Program http://langara.ca/admissions/apply-to-langara/index.html As of the fall of 2012, Langara students have had the opportunity to participate as exchange students in the Japanese and Asian Studies Program (JAS Program) at Ryukoku University in Kyoto, Japan. This program runs in the fall and spring semesters. Space is limited to one or two students per semester.

Shimane University Japan Top 100 Japan - International University Web Ranking	International Exchange Program https://www.shimane-u.ac.jp/en/strategy/index.html The Strategic Project of Shimane University International Exchanges is expected to enhance internationalization at home institute and increase the number of students from foreign countries, expand the number of Shimane University students going abroad, increase the acquisition of outside funds, and result in increased transmission of the outcomes to the world.
Université de Tlemcen (Algeria) #1 Top Algeria - International University Web Ranking	Online Courses Program https://www.univ-tlemcen.dz/en/pages/93/online-course The online courses program currently includes five disciplines which are Civil Engineering, Mechanical Engineering, Chemistry, Mathematics and Biology, this courses use a blended learning method combining online classes and presential learning. Some of the courses are specialized for different specialization.
Escuela Superior Politécnica del Litoral #2 Top Ecuador - International University Web Ranking	Master of Business Administration (MBA) https://www.academico.espol.edu.ec/postgrados/infoPost.aspx?op=1&idprog=2 Semi-presential distance program in the PostGraduate School of Business Administration.
University of Monterrey (Mexico) Top 500 - World University Ranking 2015/2016	Master in Educational Sciences (Online) http://www.udem.edu.mx/Esp/Posgrados/Educacion-y-Humanidades/Maestria-Ciencias-Educacion-Enlinea/Pages/descripcion-posgrado.aspx This program prepares experts in updating their knowledge and generating innovative actions and ideas, and to be catalysts of change and innovation in their respective educational and cultural organizations.
Regiomontana University (Mexico) Top 50 Mexico - International University Web Ranking	MBA Management in Global Administration http://www.u-erre.mx/oferta_educativa/posgrado/administracion# The MBA train executives in how to drive organizations to a better achievement of their goals, working the executives in the management of different areas in organizations with an optimal use of resources in a sustainable way, preparing them for the decision making in an international competitive environment combining a blended learning method with a face-to-face interaction in class.

Elaboration: Own Elaboration

Source: Social Science Research Network Top U.S. and International Business Schools using Virtual Technology in Cross Cultural Courses/Programs, E-learning Courses with a Blended Learning Model, the Shanghai University Ranking 2015, the U.S. National Ranking 2015, Financial Times Global MBA Ranking 2015. Retrieved from:

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Appendix D: Different types of media in Distance Education

Current media Used in Distance Education from Williams et al. (2005)

Digital Interactive Television (DiTV)	Advantages over the traditional analogue system include the better image quality and enhanced capacity (Nirianen et al., 2002).	
Video-conferencing	Generally is two-way and carries audio and video information so that people in two or more locations can see and hear each other.	
Audio-Conferencing	Two-way voice communication using standard telephone type technology (Kirby & Boak, 1987) facilitates interaction.	
World wide web/internet	The use of web in learning is not problem-free. Pajo (2001) identified a number of barriers to uptake of web technology by university staff. Chief among these were the time required in learning how to use web-based technology and develop appropriate courses, the lack of training, and monitoring web-based teaching.	
Video/audio tapes	Convenient because of their portability and because they can be used privately with headphones.	

Telephone /fax	Generally used for one-to-one contact and forms only a minor part in distance education.	
CD-ROM	Allows multimedia to be captured on to a laser disc and used with personal computers. The rise of the internet has made the use of CD-ROMs somewhat dated.	

Source: Overview of distance education research (Williams et al., 2005)

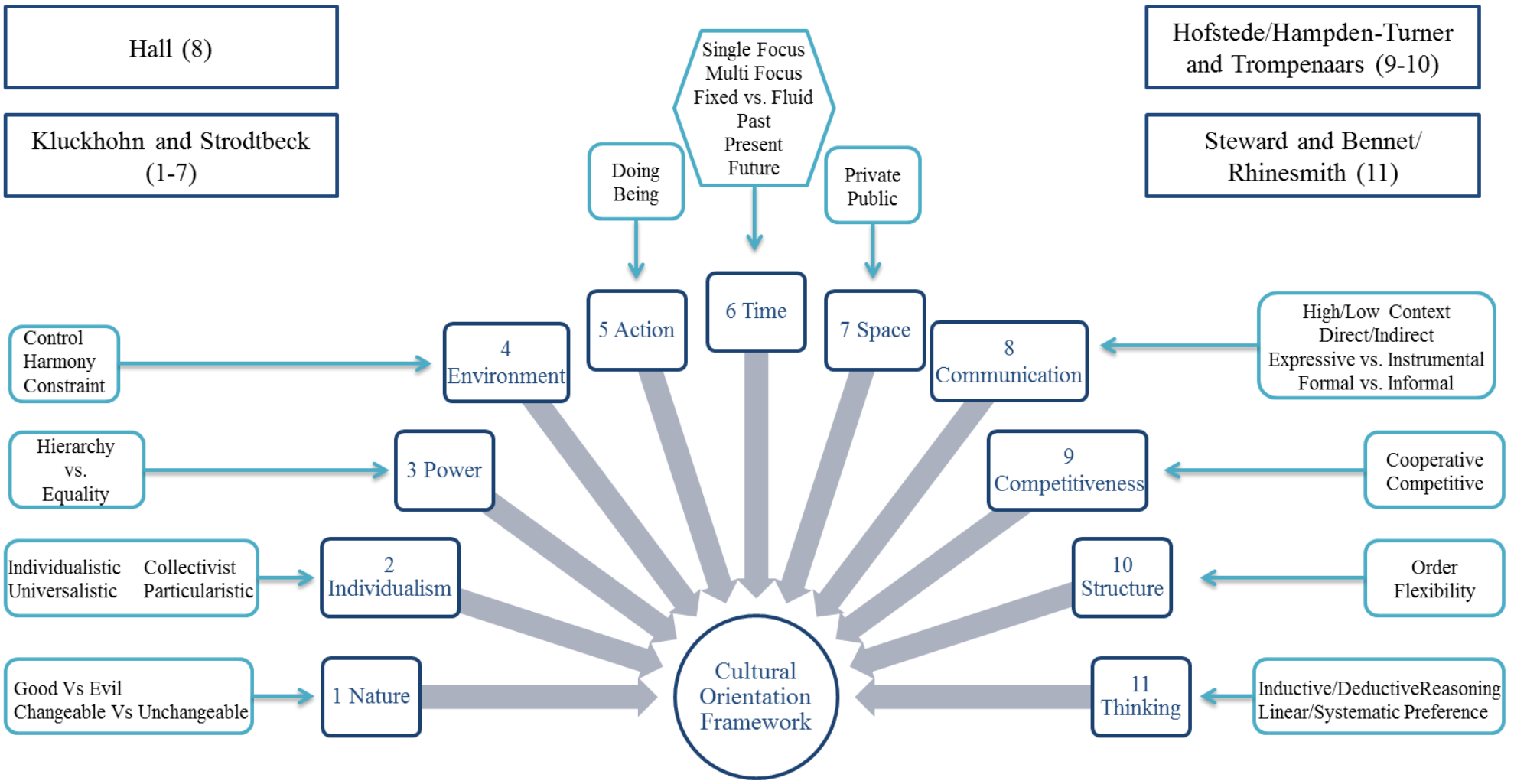
Note : personal compilation

Appendix E: Audio system equipment Description

Surface-mount microphone	(6) Shure Model MX 393 and connectors	
Metallic diffusors	Metallic diffusors (6) and speakers coaxial Perfection HSR108-8T	
Console	Console 8 inputs Perfection MM165	
Amplifier	Sound mixer15w RMS Perfection PD-600	
Videoconference Room		

Note : Personal Compilation

Appendix F: Detailed Cultural Value Orientations Diagram



Appendix G: Description of Selected Assessment tools for ICC

Author	Name of the Scale	Description	Reference
Olebe, M., & Koester, J.	Behavioral Assessment Scale	Explores the cross-cultural equivalence of the Behavioral Assessment Scale for intercultural communication. Eight scales based on an empirical study identifying significant skills profiles and validated with 263 university students.	Olebe, M., & Koester, J. (1989). Exploring the cross-cultural equivalence of the behavioural assessment scale for intercultural communication. *International Journal of Intercultural Relations, 13*, 333-347.

NOT USED IN THIS STUDY: No questionnaire available

Kelley, C., & Meyers, J.	Cross-Cultural Adaptability Inventory	To assess individual potential for cross-cultural adaptability based on the assumption that individuals adapting to other cultures share common feelings, perceptions, and experiences that occur regardless of their own cultural background or target culture characteristics. The inventory contains 50 items, resulting in individual profile scores along four dimensions.	Kelley, C., & Meyers, J. Intercultural Press. Tel: 1-800-370-2665

NOT USED IN THIS STUDY: There is a fee to access this tool

ITAP International (derived from the work of Dr. Geert Hofstede)	The Culture in the Workplace Questionnaire	This questionnaire provides insights about yourself and a better understanding of how your cultural preferences and the cultural preferences of others affect working relationships. It also provides a framework for understanding diverse approaches to workplace interactions such as problem solving, working in teams, and managing projects.	http://www.itapintl.com/tools/culture-in-the-workplace-questionnaire-cw/itapcwquestionnaire.html

NOT USED IN THIS STUDY: It is related to working relationships

Black, J. S.	Foreign Assignment Success Test (FAST) (Measures: Cross-cultural workplace adaption)	Designed to measure the ability of American expatriate managers to make successful work role transitions in Japan. The instrument employs six scales, validated on 67 American managers in Japan.	Black, J. S. (1988). Work role transitions: A study of American expatriate managers in Japan. *Journal of International Business Studies, 19*, 277-294. (http://www.jstor.org/stable/155026)

NOT USED IN THIS STUDY: The tool is not related to learning education. This test was drawn from those Americans registered with the American Chamber of Commerce in Japan. It analyzes different hypothesizes related to the adjustment in work role transitions.

Hett, J.	Global Mindedness Scale (GMS)	Pre- and post-survey designed to determine how study abroad influences the development of global mindedness among university students.	Hett, J. (1993). Florida State University. Available at Carano, K., (2004) : Teacher Attitude Survey http://www.coedu.usf.edu/main/departments/seced/SSE/Documents/Doctoral_Program/CaraonDissertationProposal.pdf

USED IN THIS STUDY: This article shows the scale and the application of the scale. The score items will reflect the theoretical dimensions: responsibility, cultural pluralism, efficacy, global centrism and interconnectedness.

Braskamp, L.A., Carter Merrill, K., Braskamp, D.C., & Engberg, M.E.	Global Perspective Inventory (GPI)	A survey of 46 items designed for self-reports of students perspectives in the three domains: cognitive, interpersonal, and intrapersonal. Interested parties can take the GPI online, identifying their home institution, since results are provided to institutions that request reports to assist in creating an environment that promotes a global perspective among their student body.	https://gpi.central.edu/index.cfm?myAction=Order

NOT USED IN THIS STUDY: A fee to access this tool

Hammer Consulting	Intercultural Development Inventory (IDI)	A 50-item assessment instrument designed to measure individual and group intercultural competence along a developmental continuum regarding the respondents' orientation toward cultural differences and their readiness for intercultural training. A statistically reliable and valid measure of intercultural sensitivity, translated into 12 languages and applicable to people from various cultural backgrounds. Users must take a qualifying seminar to use this instrument.	http://www.intercultural.org/idi/idi.html

NOT USED IN THIS STUDY: There is a fee to access this tool

Bhawuk, D.P.S., & Brislin, R.W.	Intercultural Sensitivity Inventory (ICSI)	This tool measures intercultural sensitivity using the contrastive concepts of individualism and collectivism. The tool has been validated with 46 undergraduate and 93 graduate students.	Bhawuk, D.P.S., & Brislin, R.W. (1992). The measurement of intercultural sensitivity using the concepts of individualism and collectivism. *International Journal of Intercultural Relations, 16*, 413-436.

NOT USED IN THIS STUDY: This does not apply to the study. In the first section, referred to as the US section, people were required to respond to 26 items by imagining that they were living and intended to pursue a career in the United States. In the second section called the JPN section, people were required to respond to the same set of 26 items by imagining they were living in Japan.

Brooks Peterson	Peterson Cultural awareness Test (PCAT) & Peterson Cultural Style Indicator (PCSI)	Two assessment tools designed to measure cross-cultural effectiveness and awareness of cultural differences. These reliable and valid tools provide pre- and post-indicators of intercultural learning before/after training and also promote global business success.	http://acrosscultures.com/peterson-cultural-style-indicator/

NOT USED IN THIS STUDY: There is a fee to access this tool

Fantini	Assessment of Intercultural Competence (AIC)	This questionnaire, designed in a YOGA Format ("Your Objectives, peers and Teachers. The tool monitors the development of the intercultural competence of sojourners (and hosts) over time, providing valid and reliable indicators that are normative, formative, and summative. Shorter and longer versions exist, as well as versions in English, British English, Swiss German, and Spanish.	http://www.experiment.org/documents/AppendixG.pdf

USED IN THIS STUDY: It contains a questionnaire (the Assessing Intercultural Competence questionnaire form) which is a self-evaluation that asks about the development of the intercultural competence and communication skills. This survey seeks to learn about various outcomes of intercultural service experiences – the level of intercultural competence developed by volunteers, effects on their lifestyle choices, and their impact, in turn, on communities and other individuals after returning home. This information will help us better understand how participants contribute to EIL's vision and mission.

Elmer, M. I.		The Intercultural Competency Scale (ICS) is a 45 item English questionnaire that is easily completed in 20 minutes at the website. The scores are broken down into 12 factor scores and a total score. These factors reflect behaviors and attitudes needed in order to be effective in another culture and help a person estimate their strengths and limitations. The ICS has a solid research base showing that it correlates with success in the cross-cultural context.	Elmer, M. I. (1987). Intercultural effectiveness: "Development of an intercultural competency scale." Unpublished Doctoral Dissertation.

NOT USED: There is a fee to access this tool.

Note. This tables are a personal compilation.

Appendix H: Questionnaire for Faculty Experts

Faculty Interview:

Participants: Experts in the field of virtual team and online cross cultural learning who have been part of educative projects which involve collaboration and cooperation between students from different countries and continent. Students typically use information technology – such as videoconferencing, chat system, email, data file exchange, etc. – to support their interaction during the project.

This research focuses on the development of intercultural competencies acquired by the students taking part in such a project.

This interview will require 30min of your time, the results will be treated anonymously. After the interview the transcript made will be sent to you for your personal file and allow you to provide feedback in case of any misunderstanding or misinterpretation. It will also provide you with the opportunity to add missing information and ideas. Thank you for your contribution to this research; for once, let's focus on the opinion of the teacher!

1. What is intercultural competence to you?
2. What kind of technology do you use in your classroom?
3. Do you perceive if this online cross cultural learning experience helps the students to expand their global perspective? If you do, how is this shown, or can you mention any other added value?
4. Is online education with the use of information technology the appropriate medium to support students in learning IC? If yes, mention your preferences among different mediums you know or use: face-to-face as video conference, team work assignments using media tools, blackboard, blogs, forums, chat, email, etc.
5. How can the level of IC amongst the students taking part in the project be assessed?
6. How can students be trained to develope intercultural competence?

7. Do you adapt your behavior in special ways, or use a specific methodology, for the students taking part in the online cross cultural learning experience in order to facilitate the learning process?

8. Did you experience the influence of western culture during the online education project? If yes, how? Do you have any examples?

9. How do you experience the influence of stereotypes during online education projects? Do you have any examples?

10. Would you say that some students benefit more or less from such online experience as functions of their personality and independently from their national culture?

11. How many years of experience do you have in online cross cultural learning?

12. Field of major:

13. Nationality:

14. How much do you know about your own culture in percentage terms? Would you say you know _____ of the _____ culture?

15. How much did you learn in said project?

16. Is there a part of your personality as a teacher that you consider important for success?

Appendix I: Narrative of Interview with Faculty Experts

Code	Pseudo-Name	Born in	Living and working in:
1	Mark	Germany	Netherlands
2	Erick	United States	United States
3	Kyle	Germany	Germany
4	Eddie	United States (Italian Roots)	United States
5	Vince	Hungary	UK
6	Marie	Japan	Japan
7	Melissa	United States	United States
8	Julianna	United States, (Croatian and Yugoslavian descent)	United States
9	Alonso	Spain	Spain
10	Bianca	Mexico	Mexico
11	Raul	United States	United States
12	Susie	Taiwan	United States
13	Sebastian	United States	United States and South Africa
14	Holly	United States	United States
15	Alex	Algeria	Algeria
16	Olga	Russia	Russia
17	Lisa	Turkey	Turkey
18	Carlos	Ecuador	Ecuador
19	Joaquin	Portugal	Portugal
20	Lindsey	China	China
21	Margie	Germany	Mexico
22	Selim	India	United States
23	Thomas	United States	Japan
24	Millie	Taiwan	Taiwan

Matrix Coding 1

Code	Intercultural competence	Expansion of global perspective
1	Better communication, cultural differences and knowledge.	Good use and expression of appropriate language. Also, students become prepared to engage in a conversation and the experience opens up their understanding and appreciation of real world behavior.
2	Ability for people to understand and empathize with others, see other points of view besides their own.	Interact with diverse groups; understand people from different cultures; gain a better appreciation for people's backgrounds.
3	Be able to talk and understand. Negotiate and move freely between people of different cultures.	Enhances the student's understanding.
4	Is reflected in terms of attitudes, values, beliefs	Creates opportunities for students to ask questions they maybe didn't know they were interested in asking and begin to seek answers to those questions.
5	More about values than languages; don't offend people from different cultures, ability to tolerate mistakes and offensive situations, behave in a different culture.	A technological approach that involves the use of specialized software combining rules with experiences, also "moodle", a visual learning aid supported by online tools such as forums, blogs, videos.
6	To be able to accept others and to be able to balance a variety of perspectives, accepting others ways of perception and behavior.	Not always evident in their behavior but it is how they perceive values and ways of thinking Interacted with diverse groups; affects their perspectives.
7	Ability to step outside your own point of view, awareness that there are different customs and knowledge about the rest of the world, to be able to talk to others, see things from a different point of view.	Most of the students have never been outside the United States. To stop and think from a different perspective (e.g. about Americans from different POV).
8	Go to another country or to work with individuals from other cultures in an open, respectful and appreciative way; having a sense of a culture, an idea of the values and origins of a culture; be open, respectful and appreciative of a culture; ability to effectively negotiate in another culture; awareness of the differences between cultures.	Get to know more about the partners and the diversity of students understand people from different cultures, enrich the class learning environment.

9	Ability to learn to work in an international environment, produce an objective, document or work in the assigned time with the multicultural group.	With forums, student can express themselves anywhere and at any time, apply knowledge to work, understand people from different cultures.
10	Set of knowledge, skills and attitudes to perform efficiently with other people; communicate effectively; perform effectively with people from different countries.	Even without going abroad, they have the international experience; it expands their global perspectives and changes perspectives about a country thanks to VC.
11	Missing Data	Working with colleagues from different countries and nationalities, interact with people from different cultures.
12	Knowledge of the cultural difference, ability to understand and respond to people from different cultures.	Not every student has money to travel; it helps obtain the cross cultural learning experience and helps people understand each other without misunderstanding. Positive experience.
13	Ability to identify and develop skills, behavior and ways of thinking with people different from you; be able to understand other people's perspectives, holding back judgments about people.	Write about experiences and moments of difficulty; self-reflective assignments.
14	Break down stereotypes from other cultures, gain skills in terms of understanding cultures, be able to understand these cultures.	Comparing past with present knowledge, writing some essays about their learning about other cultures and how they react finding it.
15	Put yourself in the shoes of others; it allows people to talk to people from different cultures with more understanding; get rid of prejudices and stereotypes.	Students learn to tolerate differences and to understand another culture; also they define their intercultural competence.
16	Based upon linguistic ability; ability to somehow persuade them about what you want them to understand, (to make it clear to them and to make them accept it); ability to find ways to understand people living in a different culture; ability of people to effectively communicate with representatives of other cultures.	Making students aware of different cultures: what is allowed and what is not; realize that there are different visions in the world, meanings of life, and existential values. It gives better appreciation of people's backgrounds; understand people from different cultures.
17	The way you reflect yourself through different types of behavior and skills; positioning you in front of others using empathy skills and knowing the other culture; understanding others.	Develop their qualities, languages; make future projection for their career; enlighten their lives.

18	Ability to relate, work and interact with people or institutions from other cultures.	Increase cultural awareness, increases co-ed self-steam,
19	Capacity to understand people from different cultures and act accordingly.	Videoconferences allow students to interact with other students in different countries, which is positive if you have a good structure of the course.
20	Influence between cultures and in their people, get to know each other.	They become leaders because they train themselves, they show their true selves, improve their English skills and their ability to communicate with others.
21	To be sensitive about the behavior of the other person, ability to keep an open mind, find a common way to bridge intercultural differences, adaptability to different environments.	Using students from other cultures and not teachers (more interested); change in the student's attitude; understand people from different cultures.
22	Recognize the differences between orientations and approaches to problems, situations; understanding how people work with each other; work around each other and learn to exist in different set ups from others.	The use of technology helps but it depends on the region and the age of the student, younger ones are more open to technology and it is easier for them to interact.
23	Understanding about a particular culture and language, learn skills to transfer to different cultures, ability to communicate and negotiation to arrive at agreements, ability to not always jump to conclusions.	Discuss controversial topics with other people and listen to their POV; makes students realize that English is very important to communicate worldwide; helps them practice their English with people from other places.
24	Sensitive of cultural differences, having a bad attitude to communicate with people from another culture, knowledge about other cultures, linguistic ability (understanding what has been said or written), allows people to know the traditions, customs of the people you are communicating with.	Limited in knowledge and understanding people from other culture, online tools give them a better appreciation for people's backgrounds increasing global understanding.

Note. This table is a personal compilation.

Matrix Coding 2

Code	Is technology appropriate?	Assessment	Student training
1	Students become aware of interesting topics. **Preferences:** Videoconferencing, network social pages, using chats, voicemails, Skype	Immediate feedback Pre-pulse assessment (quantitative metrological perspective) Ask: what did they like?	Videoconferencing. Games are useful, entertainment.
2	Enables the students to work pro time zones Yes, valuable and help students. It is better if we mix them. **Preferences:** Videoconference, Google docs Internet, blogs	Feedback from students Questionnaires after videoconference	Cross-cultural videoconferences through classroom, go somewhere else besides home country (study abroad programs), read journals, newspapers, read and practice the language.
3	No, but not every student can afford going abroad so it is useful and helpful. **Preferences:** Face-to-face / videoconference, chat	Negotiation Compromise	Students have to be aware of their cultural difficulties and that not just their culture is the true culture.
4	No. Even though there are unlimited virtual resources, we need more of other things. **Preferences:** Writing, reading, speaking, listening, interaction	Set objectives Manage students Check quality of work	Similar to what is done when teaching in the face-to-face context.
5	Students can get in touch with people they wouldn't be able to get in touch with. **Preferences:** Social media applications (Facebook).	Immensurable	You enable them, not train them.
6	Depends on how the person feels in reality. **Preferences:** Face-to-face interactions	Assess attitudes and behaviors Differences on feedback	First step is awareness and then repeat behaviors.
7	Yes. For some of them this is the first and only opportunity they have to interact with others because many don't have the resources to travel.	It's very expensive.	We started with the global course so that they can have a little exposure.

	Preferences: Videoconference, chat, e-mail, team work assignments, blackboard, blogs	Ask the students their opinion of what they have learnt as opposed to actually assessing.	
8	It enriches and helps synchronize discussions. **Preferences:** Videoconference, Facebook page	IC surveys Giving the students assignment to help them develop skills	Taking a group of students abroad for short or long periods and then connecting what they learnt to the cross-cultural courses.
9	Yes, it allows the students to stay in their usual environment and be members of an international team and share their point of view at the same time. **Preferences:** Videoconferences, Online forums	Periodic evaluation Check the recorded conferences Assignments Achieve objectives Participation in class Subjective evaluation criteria	Group work, participation in class and also individual assignments.
10	It enhances students' intercultural competence but it is not the only way to do this. **Preferences:** Face-to-face interaction Videoconference, online collaborating work, blackboard, Facebook	Regular assessment through several instruments	Even when students go abroad, they need some training previous to that. For example, visiting a professor or reading books from other countries. Enhance IC by adding an international component in every course.
11	Yes. Students who are working are able to study in a context where they have the best opportunity to learn. Good for people that don't have the time or the mobility to study in other places. **Preferences:** Videoconference, Thunderbird	Not easy to measure Periodic evaluations Program forces them to learn	Work in teams that have people from more than one country and culture.
12	Connection with globalization, avoids misunderstandings between cultures, it is a revolution of education.	Depends on the instructor Teachers need to know their own culture well	Read about other cultures, train cultural sensitivity and awareness.
13	It increases the likelihood of making a personal connection. **Preferences:**	Final project on a global issue Synergetic model of collaboration	Give the students case examples, role-plays.

	Videoconference, Skype, QQ (chat)		
14	Yes. It is not possible for all the students to travel and study abroad. This is very close to it. **Preferences:** Videoconference, e-mailing, chats or Facebook	It is immeasurable.	Watching movies, studying other languages, taking part in any kind of cultural activity or tradition. Take the students on field trips.
15	It depends on which one is available: synchronous or asynchronous. Synchronous is good for real time communication. The other one focuses more on writing or reflecting. **Preferences:** Videoconference, chat (synchronous)	Judge and create a qualification criterion. Copying information from the internet is one thing to be careful of.	This has to be carefully planned with a curriculum that takes into consideration strategies and techniques of building intercultural competence. Involve the students in discussions.
16	Yes. Not everyone can go abroad so videoconference is powerful to substitute real interaction. **Preferences:** Blackboard, blog, forum, chats, e-mail, videoconference (best one)	Questionnaires	We made a special site for the students where information was provided (references) of questions and tasks. Also, we do team projects and we use technologies like Doctor Pock (audio forum).
17	Improve skills of those who come from small towns. They overcome their initial fears and their knowledge and understanding of other cultures improve. **Preferences:** Facebook, e-mails	Tests	Give the students cases, role plays, make them interpret situations.
18	It is very challenging, sometimes very difficult to use. A lot of complications. **Preferences:** Online platforms, videos, forums, chats	Pre and post project surveys.	Practice readings and cases. Go on visits. Work in international groups.
19	They learn how to cope with different attitudes and different work habits. **Preferences:** videoconference	Pre and post questionnaires Personal judgments to evaluate the students but is difficult because of the different places.	It is best when, in a course, students are from different nationalities and different cultures because that way they are forced to learn while doing group projects.

20	Efficient with regards to time. **Preferences:** Videoconference, forum, blog, Facebook, Skype	Writing an international paper without downloading information from the internet.	I would like my students to train themselves. I only give them some background information and tell them what topics we will cover next class.
21	You can see the other person and it is very similar to the real exchange experience. **Preferences:** videoconference	Students who already have intercultural competence will be acting like teachers and leaders in intercultural discussions	First, theoretical training. Then, they need to understand. Use of the Hofstede theories.
22	Poor medium to teach IC. Culture plays out through all our senses and with virtual conversations you don't get that. Some cultures have physical touch as an important characteristic. **Preferences:** Face-to-face	Look at certain culture characteristics and create parameters or variables that illustrate behaviors.	Have global connections with other countries. If we can´t travel, then I create focus groups to give them tasks.
23	It is useful as a simulation of a direct intercultural experience.	Ask the students what they learnt during the semester.	Experience reflection added to some sort of theoretical framework.
24	Helpful for the students, they change attitude and can now write papers contrasting two different cultures. **Preferences:** Power Point, Blackboard (online), video-recordings	Quantitative statistics Qualitative reports Class presentation	Connect students with other students from other countries. Students also need some theoretical background.

Note. This table is a personal compilation.

Matrix Coding 3

Code	Do online classes benefit some students? All of them?	Teacher's adaptation to online classes	Teacher's personality	Stereotypes
1	People that speak more get more advantages. It is difficult for shy people to speak.	More flexible, full control.		Students don't have a real picture of what they expected. Ethnocentrism.
2	Some students are willing to talk more and share their ideas.	We have to coordinate, organize ourselves and get information technology.	I am willing to see other people's POV, to learn and have fun.	Political stereotypes
3	The ones who have hearing difficulties benefit less.	I change my behavior according to the language I use.	Make sure students experience all types of culture.	Prior to the sessions, we discuss about stereotypes and then we confirm if they are true.
4	Personality and individual differences (culture) improve	I figure out ways to make the students more engaged. I also expect them to work outside the class with the online tools and I give them assignments.	I like the interface between language and knowledge. It is my personality.	Stereotypes are the best way to learn a language; we learn a concept and then culturally understand it.
5	Depends on family background, level of open mindedness.	I respond to students, I am there with them, I sense them and adapt methods according to them	Values are the most important.	Control interaction between the students interferes in the cross-cultural development and stereotype breaking
6	Personality. The solution is to combine online tools.	Adapting their teaching methods, encouraging students to ask a lot of questions in order to get good grades.	Being helpful in order to improve students' learning process	Students are very broad-minded, they clear their mind. We don't really experience them.
7	Personality. How much do you speak to others	Teachers have to be flexible and adaptable.	Be adaptable, flexible, and easy-going and encourage students to do the things they need to do. Have fun.	Sometimes, students feel offended when they hear them that's why it's so important to talk about it

8	Personality, culture.	Helped students find resources for the assignments.	Caring personality.	My role is to make sure the stereotypes are addressed and be sure nobody judges others.
9	It depends on their personalities: introverted, extroverted	I think what changes is the adaptation of the teacher to the technology, not to the students.	Dedication and love.	It is the job of the teacher to act as a mediator and give a positive insight of the stereotypes that come up.
10	Good students.	We use Kolb's learning theory of experimental learning.	Be interested in learning, be creative, be fun, engage the students.	You see the change. These courses reduce the stereotyping.
11	Yes, people are able to work from a distance and at times they choose. Some students are able to adapt better to the style of the classes.	Change the structure of the class discussion to have a more open and flexible environment. Also, I set timetables to manage expectations.	Flexible.	Stereotypes are something that I enjoy. Some of them are true and others aren't, but it is good to discover which is which.
12	They help each other but sometimes students hesitate because they are not in their comfort zone.	Me and the partner teacher communicate first and then we also send information and share about the differences in both cultures. Then we practice and roleplay.	Patience, put in a lot of effort, commitment and understanding.	Stereotypes influence the way students work and, as they learn, they come up with more stereotypes.
13	Depends on the maturity of the student.	I speak more slowly; ask if there is any confusion. Be more reflective.	Patience and an open-minded approach are necessary. I need to develop more patience and more open mindedness.	We give examples, ask questions and compare their answers to the answers of people from the culture being discussed.
14	Personality, types of technology.	A more patient, understanding, compassionate attitude	Patience and empathy for everyone. Set the tone for class because you are the role model.	Breaking stereotypes e.g. Egypt (no big cities, people riding camels). I help them learn that Egypt has modern cities.

15	Personal differences, extroverts, introvert.	We need to take what we have read and learnt so far and adapt it to particular situations. I had to develop sensitivity towards the difficulty and the type of communication of the online classroom.	Have effective communication, be a counsellor.	Stereotypes about clothing, behavior and culture break down with cultural awareness, especially with Muslim countries.
16		A teacher should be a facilitator, be part of the student's community, help them and ask them, recognize them.	Personal experience, global workplace.	Breaking down of stereotypes
17	Depends on their personality, background and the barriers of the culture.	I ask the students to think out loud about the case problem you have so that you receive help from others in the class. We make the students look at problems in a different way and encourage them to use their own ideas.	Love of learning and teaching is necessary in a teachers' personality	In online education we didn't see many pessimistic ways of it.
18	Personality.	These classes are more experiential, deeper experiences. It depends on the age of the students.	Taking risks and taking every opportunity for improving teaching	Students set up a stereotype at the beginning but then they break it during the project.
19	Depends on the culture and the country.	Previously, prepare the students in order to fully profit from the opportunity. I have to make sure everybody intervenes, talks, discusses things.	Be neutral when dealing with different cultures.	They can be useful and they can be negative.
20	Personality.	If I perceive a new methodology then yes. But I also think I use a method of managing people.	Be a good communicator, express ideas clearly, listen to the students.	Stereotypes in gender affect are present in most cultures.

21	Depends on the teacher and students personality.	Changes of attitude. Teachers should let the students experience; step back and let them be.	Commitment to intercultural interaction.	We try to avoid them but we make them understand that it is not necessarily a bad thing.
22	Personality, independent from their culture.	I tend to stay out of the way so the interaction can be as normal as possible	Affection, being honest, being helpful.	In online media we all do it in some ways (media propagates it).
23	Depends on the learning style.	These students need more scaffolding. We try to give them type examples of model assignments so that they know what they are expected to do.	Experience things to reflect on them and bridge conflict.	
24	Personality.	Make students watch videos about cross-cultural communication, provide work sheets, give reading and introducing theoretical framework such as Hofstede's model.	Ability to adapt and contain yourself in order to let students work by themselves	Sometimes we are not aware of some things and that can lead us to believe in stereotypes but intercultural experiences make us aware.

Note. This table is a personal compilation.

Appendix J: Group Coding Key words

1. What is intercultural competence to you?
Ability to relate with others, to understand (language and linguistic ability)
Skills to understand
Ability to build and perform efficient relations with other culture
Sensibility and awareness
Tolerance/ cultural respect
Improvemed communication, verbal and nonverbal, effective,
Global workplace, Global context
Get rid of stereotypes/ breakdown stereotypes/ no stereotypes
See other points of view
Empathy skills
Influence of each other
Cultural intelligence
Able to recognize problem and situations
To be able to effectively negotiate
If you can behave in a different culture
Do not offend people
It is more about values than languages
Difference with native speakers

2. What kind of technology do you use in your classroom?	
Email	Mobiles
Chat	Social media (uses technology but itself is technology)
Second life	
Centra	Smartboard
QQ	Dream weaver
Skype	Doctus
Ppt slides	Polycom connection
Videos	Flogging
Moodle	Myplace
You Tube	MSN
Wimba	Google docs
Twitter	

3. Do you perceive if this online cross cultural learning experience helps the students to expand their global perspective? If you do, how is this shown, or can you mention any other added value?
Acquire knowledge
Mental flexibility
More open mind
Change in behavior, change in attitude, change in perspective
Improve interaction and communication
Became more tolerant
Develop awareness when in global places
Motivation
Intercultural inventory
New ideas and new ways of thinking
Optimize (mentally) themselves
Understanding of different cultures
When surprised about new experiences (discover, enlighten)
Change on the hierarchy of decision making structure
Global thinking
New knowledge reporting mistakes ex -post interactions
New perception of the world, with different eyes
Appreciate and understand the real world behavior
Taking interest in the world
Tolerate differences
Understanding generational differences and perspectives
Understanding regional differences and perspectives
Get feedback from real world

4. Is online education with the use of information technology the appropriate medium to support students in learning IC? If yes, mention your preferences among different mediums you know or use: face-to-face as video conference, team work assignments using media tools, blackboard, blogs, forums, chat, email, etc.
Yes, VC, chat, blackboard,
VC capture nonverbal communication, less distraction,
Travel alternative,
Replace face-to-face contact, VC is more personal than the others,
Is a supportive tool,
Preference for synchronous even though asynchronous gives the chance to meditate
No, does not develop nonverbal communication, and non-fluent,
Online can be more honest about desires of people (this refers to students less auto spoken)
It's useful but insufficient, at least should study one year abroad...
Collaborative work online (team work as a preference)
Social media
Limitations to understanding culture through a conversation
It's not the appropriate
VC is appropriate for online presentations
Forum to discuss group assignments
Limitations: generational problem in the use of technology and social media
Diversity of the students really enriches the class

5. How can the level of IC amongst the students taking part in the project be assessed?
By final project of global issues
By writing and essay on a global topic without downloading information from the internet
By participation in class
Feedback of the students
Assess, observing attitudes and behaviors
Synergetic model of collaboration
Checking how increases the affection to other countries
Ability to handle uncomfortable situations
By a final class presentation, collaborative projects, qualitative statistics,
Check recorded conferences
Pre and post questionnaires/and survey
Un-measureable
With test available, but expensive
With self-support
More important the learning process than the final assessment
Through the affection and interest shown
Difficult to assess, to measure,
Subjective evaluation criteria,
IC is immaterial
Instruments are expensive
Create variables to understand behaviors
Writing what did you learn
Writing what did you like
Feedback of students
Not sure to assess, I don’t think it is measurable

6. How can students be trained to develope intercultural competence?
Observing and reading about cultural traditions though movies, literature, creating scenarios
Teaching theories (e.g. Hofstede)
Through projects, case Examples
Intercultural teams
Learn languages
Role playing (present practical cases of intercultural situations, study cases)
Doing previous research on the culture
Binary Opposition: be able to produce a new category
Add an international component in all the courses
Not trained, but enable them
Offer training before the study abroad period
Through VC, role play, cases
Interactive
Helping to build a good relationship
Travelling
Participating in study abroad programs
After the exchange experience you need to ask the students how the interchange impacted their future

8. Did you experience the influence of western culture during the online education project? If yes, how? Do you have any examples?
Yes, influence from us and Europe in South America
Lifestyle (behavioral patterns)
Interpretation from non-English native speakers
Western culture measures everything
Make decision in consensus
Ability to learn from others
Interpretation of culture comes from Strong Influence of western media (movies, TV)
Influence theory, models, concepts
During interaction western context is taken into account for the analysis
Keeps practical
Positive appreciation of western (American) education
Not enough knowledge of non-western cultures
American culture is more independent
Western culture is more direct, self-oriented and punctual
Eastern culture is more oriented to a group community
Americans want to feel comfortable
Latin Americans found more similarities with American cultures than Eastern cultures
Western cultures are ethnocentric
Most of the research comes from USA OB and HR
Easy going
Adaptation: The old generational way of teaching adapted to a modern one

9. How do you experience the influence of stereotype during on-line education project? Do you have any examples?
Confirmation of stereotypes
Confirmation of gender stereotypes
Learn not to generalize stereotypes
After experience stereotypes breakdown
Stereotypes don't negatively affect relationship
Stereotypes do affect and are important to understand a culture
Students are open minded Religious stereotype
Americans get offended with stereotypes
Stereotypes are eliminated when you know a person
Finding similarities between the students in each location
Media influence on creating stereotypes
It is strong on the American side

10. Would you say that some students benefit more or less from such online experience as a function of their personality and this independently from their national culture?
Forums help introverted people
Some learning styles adapt to some cultures
Mix of methodologies balances different personalities
Extroverted attitude allows effective communication
Methodologies brings opportunities to everybody
The higher the education level, the greater the capacity to understand others
Yes but also depends on each one's interest
Yes, but Not less than other factors, such as the teacher's methodology, technology tools Difficult to speak for shy people, teachers need to how to integrate them
Depending on their technology skills and social media participation
Depends on maturity
Assumption after each experience
The more open minded somebody is, the bigger the benefit will be
On line learning breaks down those barriers

11. Is there part of your personality as a teacher that you consider important for success?	
Patience	Your values
Flexible	Coach the class (set the tone of the class, intervening when is needed)
Adaptability	
Motivation to learn	Talkative
Interest in other cultures	Participative
Humility	Extrovert
Be a good communicator, listener	Being a facilitator
Be creative and fun	Being helpful with the students
See other people points of view	Respect honor
Be knowledgeable	How successful I am in terms of how my students learn
Be impartial , sort of neutral	Emphatic

Note. This tables are a personal compilation.

Appendix K: Survey for Students

SURVEY

Thank you for taking part in this survey. The opinions and information provided will help us to identify important issues and criteria for training in the acquisition of cross cultural competence skills:

Part I. How frequently did you use the following media with your team-mate?

Please mark with an X in the box accoarding the frecuency of use

1 a week	2 times a week	3 times a week	4 times a week	Never
1	**2**	**3**	**4**	**5**

	1	2	3	4	5
Video Conference					
Telephone Conference					
Instant Messaging (chat)					
Electronic Conference (as skype or other similar)					
Electronic Mail					
Fax					
Voice mail					

Part II. Indicate your perception when using VC for communicating. Please rate each of the following statements from strongly disagree to strongly agree. <u>MARK ONE OPTION</u>

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Moderately Disagree	Slightly Disagree	Undecided	Slightly Agree	Moderately Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
It was difficult to communicate with my team members							
Communicating with my team members during the VC was easy							
Communicating with my team members during the VC was clear							
You had fun communicating with the group members during the videoconference							
You enjoyed communicating with the group members during videoconference							
You have maintained consistency in your style of communication during videoconference							
You have changed in your style of communication during the video conference							
You felt comfortable expressing yourself during the video conference							
You had a hard while communicating during the videoconference							
You could communicate in a structured way during the videoconference							
You could organized your thought pretty well during videoconference							
The videoconference is an impersonal way of communicating							
The videoconference is a cold way of communicating							
The videoconference is an unsociable way of communicating							
The videoconference is a sensitive way to communicate							

Part III. For the following statements, indicate your feelings when using VC for communicating. <u>MARK ONE OPTION</u>

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Moderately Disagree	Slightly Disagree	Undecided	Slightly Agree	Moderately Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
When using the videoconference you feel like you get to know your teammate better.							
The videoconference allowed you to give and receive timely feedback							
The videoconference allowed you to tailor your messages to your own personal need							
The videoconference allowed you to communicate emotional tones during your interaction							
The videoconference allowed you to communicate emotional attitudes during your interaction							
The videoconference allowed you to communicate your feelings during your interaction							
You feel uncomfortable communicating emotional issues when using the videoconference							
You feel comfortable discussing personal or private issues when using the videoconference							
You feel close to your teammates when using the videoconference							
your vision on each other's culture has changed toward a more negative perception							
your vision on each other's culture has changed toward a more positive perception							
your vision on each other's culture has not changed							

Part IV. Indicate which level of capability videoconference as a media can provide in terms of:

Please mark with an X in the box accoarding the level

High	Medium High	Low Medium	Low
1	2	3	4

	1	2	3	4
The speed at which a medium can deliver a message				
The inability to transmit certain physical, visual and verbal symbols				
Carefully craft a message before transmission to ensure that the intended meaning is expressed precisely				
The ability to reexamine or re-process a message, furing decoding, either within the context of the communication event or after the event has passed				

Part V. Compare your ability at the BEGINNING of the course:

Please respond to the questions in each of the four categories below to indicate your ability.

<u>BEFORE</u> the course

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Moderately Disagree	Slightly Disagree	Undecided	Slightly Agree	Moderately Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
I could cite a definition of culture and describe its components and complexities							
I knew the essential norms and taboos of the partner culture (e.g., greetings, dress, behaviours, etc.)							
I could contrast important aspects of the english language and culture with my own.							
I recognized signs of culture stress.							
I recognized strategies for overcoming signs of culture stress.							
I knew some techniques to aid my learning of the host language and culture							
I could cite important historical and socio-political factors that shape my own culture.							
I could cite important historical and socio-political factors that shape my partner culture							
I could cite various learning processes and strategies for learning about and adjusting to the partner culture							
I could describe interactional behaviours common among partners in social and professional areas (e.g., family roles, team work, problem solving, etc.)							
I could discuss and contrast various behavioural patterns in my own culture with those in my partner.							

Compare your ability at the END of the course:

Please respond to the questions in each of the four categories below to indicate your ability <u>AFTER</u> the course.

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Moderately Disagree	Slightly Disagree	Undecided	Slightly Agree	Moderately Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
I could cite a definition of culture and describe its components and complexities							
I knew the essential norms and taboos of the partner culture (e.g., greetings, dress, behaviours, etc.)							
I could contrast important aspects of the English language and culture with my own.							
I recognized signs of culture stress.							
I recognized strategies for overcoming signs of culture stress.							
I knew some techniques to aid my learning of the host language and culture							
I could cite important historical and socio-political factors that shape my own culture.							
I could cite important historical and socio-political factors that shape my partner culture							
I could cite various learning processes and strategies for learning about and adjusting to the partner culture							
I could describe interactional behaviours common among partners in social and professional areas (e.g., family roles, team work, problem solving, etc.)							
I could discuss and contrast various behavioural patterns in my own culture with those in my partner.							

Part VI: On the following pages you will find a series of statements. Please read each statement and decide whether or not you agree with it and choose the option that most accurately reflects your opinion. There are no "correct" answers. **MARK ONE OPTION**

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Moderately Disagree	Slightly Disagree	Undecided	Slightly Agree	Moderately Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
I generally find it stimulating to spend an evening talking with people from another culture.							
I feel an obligation to speak out when I see our government doing something I consider wrong.							
My country is enriched by the fact that it is comprised of many people from different cultures and countries.							
Really, there is nothing I can do about the problems of the world.							
The needs of my country must continue to be our highest priority in negotiating with other countries.							
I often think about the kind of world we are creating for future generations.							
When I hear that thousands of people are starving in an African country, I feel very frustrated.							
My compatriots can learn something of value from all different cultures.							
Generally, an individual's actions are too small to have a significant effect on the ecosystem.							
My compatriots should be permitted to pursue the standard of living they can afford if it only has a slight negative impact on the environment.							
I think of myself, not only as a citizen of my country, but also as a citizen of the world.							
When I see the conditions some people in the world live under, I feel a responsibility to do something about it.							
I enjoy trying to understand people's behavior in the context of their culture.							
My opinions about national policies are based on how those policies might affect the rest of the world as well as my country							
It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.							

	1	2	3	4	5	6	7
My compatriot's values are probably the best.							
In the long run, my country will probably benefit from the fact that world is becoming more interconnected.							
The fact that a flood can kill 50,000 people in Bangladesh is very depressing to me.							
It is important that universities and colleges of my country provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.							
I think my behavior can impact people in other countries.							
The present distribution of the world's wealth and resources should be maintained because it promotes survival of the fittest.							
I feel a strong kinship with the worldwide human family.							
I feel very concerned about the lives of people who live in politically repressive regimes.							
It is important that we educate people to understand the impact that current policies might have on future generations.							
It is not really important to me to consider myself as a member of the global community.							
I sometimes try to imagine how a person who is always hungry must feel.							
I have very little in common with people in underdeveloped nations.							
I am able to affect what happens on a global level by what I do in my own community.							
I sometimes feel irritated with people from other countries because they don't understand how we do things here.							
My compatriots have a moral obligation to share their wealth with the less fortunate peoples of the world.							

Part VII. General Information:

Date: _____

Gender: Male_____ Female_____

Age: _____

Location of university where you are taking your videoconference class (country): _____

Nationality: _____

My native or first language is:

____English

____Other (please specify :_____)

I have travelled outside of my country to study:

___never

___once or more (indicate number of months :_____)

Mark your program level:

____Graduate Student

____Undergraduate Student

Appendix L: New Constructs in the Investigation of Students' Participation in an International Collaborative Link Project

Number	Item (Construct)	Relation to literature	New Construct item	Cronbach's alpha
1	Experience factor when communicating through VC	Channel expansion theory and media richness perception Carlson, J. & Zmud, R. (1999)	**Factor 1: "ICT media are easy to use in a collaborative link class "**	
			Communicating with my team members during the VC was easy. (0.85)	0.74
			Communicating with my team members during the VC was clear. (0.79)	
			You enjoyed communicating with the group members during videoconference. (0.52)	
			Factor 2: "ICT media are suitable for maintaining a personal communication style"	
			You felt comfortable expressing yourself during the video conference. (0.62)	0.75
			You have maintained consistency in your style of communication during videoconference. (0.54)	
			You could organize your thoughts pretty well during videoconference. (0.54)	
			Factor 3: "ICT media can create a cold atmosphere in a collaborative link class"	
			The videoconference is a cold way of communicating. (0.83)	
			The videoconference is an unsociable way of communicating. (0.80)	
			The videoconference is an impersonal way of communicating. (0.75)	0.75
2	Perceived richness of VC, when it is used for communicating	Channel expansion theory and media richness perception Carlson, J. & Zmud, R. (1999)	**Factor 4: "ICT media facilitate human expressions in a collaborative link class "**	0.89
			The videoconference allowed you to communicate emotional tones during your interaction. (0.88)	
			The videoconference allowed you to communicate emotional attitudes during your interaction. (0.86)	
			The videoconference allowed you to communicate your feelings during your interaction. (0.81)	
			The videoconference allowed you to tailor your messages to your own personal need. (0.74)	
			When using the videoconference you feel like you got to know your teammate better. (0.73)	
			The videoconference allowed you to give and receive timely feedback. (0.65)	
			Do you feel close to your teammates when using the videoconference. (0.61)	

3	Five theoretical dimensions, share the commonalities of the welfare of the global community, gaining awareness and appreciation of diverse cultures *Responsibility *Cultural pluralism, *Concern about poverty and Sustainability *Efficacy *Global centrism	Hett's Global-Mindedness Scale (GMS) Hett, J. (1993) Carano, K (2004)	**Factor 5: "ICT media in a collaborative link class support the development of social values".** When I see the conditions some people in the world live under, I feel a responsibility to do something about it. <Responsibility> (0.72) It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations. <Efficacy>(0.71) I feel very concerned about the lives of people who live in politically repressive regimes. < Responsibility> (0.69) I feel a strong kinship with the worldwide human family. <Interconnectedness> (0.64) My compatriots have a moral obligation to share their wealth with the less fortunate peoples of the world. < Responsibility> (0.62) I think my behavior can impact people in other countries. (0.609) I often think about the kind of world we are creating for future generations <Interconnectedness>. (0.608) I am able to affect what happens on a global level by what I do in my own community.<Efficacy> (0.606) The fact that a flood can kill 50,000 people in Bangladesh is very depressing to me. <Responsibility> (0.59)	0.84
			Factor 6: "ICT media in a collaborative link class facilitate cultural understanding and cultural pluralism" I enjoy trying to understand people's behavior in the context of their culture.< cultural pluralism> (0.745) I generally find it stimulating to spend an evening talking with people from another culture. < cultural pluralism> (0.743) My compatriots can learn something of value from all different cultures. .< cultural pluralism> (0.72) It is important that the universities and colleges of my country provide programs designed to promote understanding among students of different ethnic and cultural backgrounds. .< cultural pluralism> (0.65) It is important that we educate people to understand the impact that current policies might have on future generations. .< cultural pluralism> (0.62) I think of myself, not only as a citizen of my country, but also as a citizen of the world. <Interconnectedness> (0.53)	0.83

	Factor 7: ICT media in a collaborative link class permit us to be aware about human concern attitudes" Generally, an individual's actions are too small to have a significant effect on the ecosystem. <efficacy>(0.79) Really, there is nothing I can do about the problems of the world. <efficacy>((0.67) My compatriots should be permitted to pursue the standard of living they can afford if it only has a slight negative impact on the environment.<Globalcentrism) (0.54) It is not really important to me to consider myself as a member of the global community <Interconnectedness>. (0.51)	0.7
	<Items reflecting theoretical dimensions , responsibility, cultural pluralism, efficacy, global centrism, interconnectedness>	

Note. This table is a personal compilation.

Appendix M: Means at the beginning/ end of the course for Peruvian Students

Variables	Mean		Std. Deviation		t	gl	Sig. (bilateral)
	Beginning of course	After course	Beginning of course	After course			
1) I could cite a definition of culture and describe its components and complexities	4.81	5.74	1.22	1.03	-6.12	96	,000
2) I knew the essential norms and taboos of the partner culture (e.g., greetings, dress, behaviors, etc.)	4.57	5.58	1.48	0.98	-6.45	96	,000
3) I could contrast important aspects of the English language and culture with my own.	4.89	5.78	1.39	0.95	-5.89	96	,000
4) I recognized signs of culture stress.	4.43	5.29	1.46	1.32	-6.06	96	,000
5) I recognized strategies for overcoming signs of culture stress	4.32	5.41	1.40	1.13	-7.34	96	,000
6) I knew some techniques to aid my learning of the host language and culture	4.64	5.63	1.24	0.92	-6.81	96	,000
7) I could contrast my own behaviors with those of my partners in important areas (e.g., social interactions, basic routines, time orientation, etc.)	5.05	5.76	1.26	1.00	-5.08	96	,000
8) I could cite important historical and socio-political factors that shape my own culture	4.88	5.63	1.35	1.11	-5.23	96	,000
9) I could cite important historical and socio-political factors that shape my partner's culture	4.53	5.35	1.47	1.09	-5.43	96	,000
10) I could cite various learning processes and strategies for learning about and adjusting to the partner's culture	4.43	5.49	1.41	1.04	-6.40	96	,000
11) I could describe interactional behaviors common among partners in social and professional areas (e.g., family roles, team work, problem solving, etc.)	4.80	5.70	1.28	0.93	-6.71	96	,000
12) I could discuss and contrast various behavioral patterns in my own culture with those in my partner's culture	4.81	5.72	1.41	0.99	-5.81	96	,000

Note. This table is a personal compilation.

Appendix N: Pairwise Comparison

Pairwise Comparisons

New construct : "Cultural preferences influence the interest in acquiring Intercultural Competence mediated technology"			Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
ICT media is easy to use in a collaborative link class	Peruvian	French	,832*	.255	.001	.328	1.337
		American	.374	.295	.206	-.208	.956
		Dutch	,763*	.288	.009	.195	1.331
"ICT media is suitable for maintaining a personal communication style"	Peruvian	French	,804*	.256	.002	.298	1.310
		American	-.020	.296	.946	-.604	.564
		Dutch	.327	.288	.258	-.243	.897
"ICT media can appear as a cold atmosphere in a collaborative link class"	Peruvian	French	-.469	.305	.126	-1.072	.134
		American	,942*	.352	.008	.247	1.638
		Dutch	.660	.344	.057	-.019	1.339
"ICT media facilitates the expression of human emotions in a collaborative link class	Peruvian	French	,785*	.245	.002	.301	1.269
		American	-,653*	.283	.022	-1.212	-.095
		Dutch	1,000*	.276	.000	.454	1.545
ICT media in a collaborative link class support the development of social values	Peruvian	French	,626*	.194	.002	.243	1.010
		American	-.377	.224	.094	-.820	.065
		Dutch	,887*	.219	.000	.455	1.319
ICT media in a collaborative link class facilitate cultural understanding and cultural pluralism	Peruvian	French	-.183	.189	.335	-.557	.191
		American	-.278	.218	.206	-.709	.154
		Dutch	,453*	.213	.035	.032	.874
ICT media in a collaborative link class permit us to be aware of challenges to resolving human problems	Peruvian	French	-.324	.275	.240	-.868	.219
		American	,630*	.317	.049	.003	1.257
		Dutch	-,651*	.310	.037	-1.263	-.039

Based on estimated marginal means

*. The mean difference is the significance at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Appendix O: Survey of Managers and Alumni

Appendix O1: Invitation to Alumni Spanish version

Universidad ESAN <gradsurvey@esan.edu.pe> 28/10/14

Si no puedes ver apropiadamente este eMail, haz clic aquí.

INVITACIÓN

La Universidad ESAN invita a los graduados de ESAN a participar de una encuesta que es parte de un estudio de investigación. Las preguntas son acerca del programa de estudios en que participó, el componente internacional en el programa, su percepción sobre estilos de gestión y su opinión sobre cómo la tecnología puede apoyar a la capacitación y entrenamiento en ambientes internacionales , la encuesta que consta de 52 preguntas tomará unos 15 minutos para responder.

Para responder haga clic aquí o ingrese a https://es.surveymonkey.com/s/WQNL5JC. Sus respuestas son anónimas . Los datos del estudio se utilizarán solamente para fines de investigación,. En caso de cualquier pregunta acerca del estudio comuníquese con la profesora Mariella Olivos de la Universidad ESAN al correo electrónico:gradsurvey@esan.edu.pe

Gracias por su participación,

Universidad ESAN

Appendix O2: Survey Given to Alumni and Managers

This survey is part of a research study and was designed to be applied to graduates of ESAN University. You will be asked about international components of your university degree, about your management style and intercultural experience, and about how information technology can support training for interacting within international environments.

1. Your university study program experience

Please circle your answer

1. Did you travel abroad as a part of your university study program? (Yes / No) *If yes, proceed to question 2. If no, proceed to question 4.*
2. If you answered yes to question 1, for how long was the international course/program that required you to travel abroad?

a. Between one and four weeks
b. A semester
c. A full year

3. If you answered yes to question 1, where did you travel to as part of your university study program?

A. Africa
B. Asia
C. Australia
D. Central America, Mexico and the Caribbean
E. Europe
F. North America (the U.S. and Canada)
G. South America

4. As part of your study program, did you take a course on how to manage cultural diversity or how to manage international teams? (Yes / No)
5. Have you ever taken a course or training program outside your university study program on how to manage cultural diversity, or how to develop global business skills? (Yes / No)
6. Did you take part in an international team project during your studies? (Yes / No)
7. During your studies, did you use any kind of technology to interact with other students abroad as part of class methodology? (E.g. Videoconference, Skype, Web based platforms, or social media) (Yes / No)

2. Your intercultural experience at work

1. After graduating, have you developed an international career that involves travelling abroad or dealing with foreigners? (Yes / No)
2. Have you travelled abroad for work purposes? (Yes / No)
   If yes, please proceed to question 3. If no, please proceed to section 3: "Your perceptions of the management style at your Business School"
3. If you answered yes to question 2, where have you travelled to for work and/or business purposes?
   a. Africa
   b. Asia
   c. Australia
   d. Central America, Mexico and the Caribbean
   e. Europe
   f. North America (the US and Canada)
   g. South America
   h. South America

3. Your perceptions of the management style at ESAN University

Below you will find 3 statements that characterize the kind of administration styles used at ESAN University.

Please read each statement carefully then choose ONE option (A, B or C) that best represents your perception of the administration style at ESAN and tick the corresponding box:

A) ESAN is managed by a hierarchical system. The head possesses authority legitimized by his/her formal position and I think the contribution of individuals that do not possess authority is underestimated.	☐
B) At ESAN, power is shared equally amongst some or all members of the organization. ESAN is strongly normative in orientation and it seems to me that professionals also have a say in the decision making process.	☐
C) It seems to me that at ESAN, decision making focuses on the distribution of power and that it is concerned with interests and interest groups.	☐

4. The Style of Management in your Workplace

Below you will find some statements that may characterize the kind of administrative management your company holds. Please read each question carefully then mark the option that best represents your personal opinion:

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
1. I think management practices in my company are dominated by technical and bureaucratic procedures, rather than by result oriented practices.							
2. I think that my company practices are more oriented towards the responsibility of the employees or the employees' job performance, rather than towards the employees' wellbeing.							
3. I think my company's highly educated members identify themselves primarily with their profession rather than with the identity of the organisation they work for.							
4. I think in my company, the people's private lives are their own business.							
5. In my workplace, job competence is the only criterion for hiring people.							
6. I think my company widely accepts and admits outsiders and newcomers.							

5. Your management style when monitoring employees and teams

Please mark with an X in the box accoarding the frecuency

Always	Sometimes	Never
1	2	3

	1	2	3
1. Do you provide your team with systematic feedback to improve operation or to identify ineffective team behaviours, in order to take corrective action?			
2. Do you encourage your team to set goals and discuss how they will work together?			

6. Element style when monitoring employees and teams

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
3. When a team problem is diagnosed, it should be resolved by jumping directly to remedial proposals and treat symptoms rather than root causes.							
4. When a team problem is diagnosed, the situation should be analyzed before making a decision on how to resolve the issue.							

7. World View differences

Please read each question carefully then circle the option that best represents your personal opinion:

***Culture shock: A generalized trauma one experiences in a new and different environment**

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
1. I could cite a definition of culture and describe its components and complexities.							
2. I could contrast important aspects of a foreign language and culture with my own.							
3. I can recognize signs of culture shock.							
4. I can recognize strategies for overcoming signs of culture shock.							
5. I could contrast my own behaviours with those of a foreign country in important areas (e.g., social interactions, basic routines, time orientation, etc.)							
6. I could cite important historical and socio-political factors that shape my own culture.							
7. I could cite various learning processes and strategies for learning about and adjusting to a foreign culture.							
8. I think I am an intercultural person because I know how to work and do business with foreigners.							
9. Considering the fact that English is the main business language, I think this has been a barrier for me.							
10. I enjoy trying to understand people's behavior in the context of their culture.							
11. My compatriots values are probably the best.							
12. In the long run, my country will probably benefit from the fact that world is becoming more interconnected.							
13. It is important that universities and colleges of my country provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.							
14. I sometimes feel irritated with people from other countries because they don't understand how we do things here.							

8. Your Opinion on the Use of Technology in Training

Please circle the option that best represents your personal opinion:

***Intercultural Competence is the ability and the acquired knowledge that allows an efficient interaction consciously and unconsciously with people from foreign cultures that have different values, behavior and communication styles.**

1. Do you think it is realistic to learn or train in Intercultural Competence using media technology for interacting with members from another culture? (Yes / No)
2. Below is a list of different types of technology that could be implemented in class methodology. How appropriate are they in developing International Competence? (Mark the option which reflects most closely your personal opinion)

Please mark with an X in the box accoarding the intensity of agreement

Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**	**6**	**7**

	1	2	3	4	5	6	7
a. Video conferences help develop International Competence. (Skype or similar)							
b. Telephone conferences help develop International Competence.							
c. Instant messaging (Chat) helps develop International Competence.							
d. Electronic mail helps develop International Competence.							
e. Face to Face communication helps develop International Competence.							

3. When training is provided to acquire Intercultural competence, how important are the following characteristics of the technology used?

Please mark with an X in the box accoarding the intensity of importance

Very important	Important	Neutral	Of little importance	Not important
1	**2**	**3**	**4**	**5**

	1	2	3	4	5
a. The speed at which a medium can deliver a message					
b. The ability to transmit physical, visual and verbal symbols					
c. The ability to carefully craft a message before transmission to ensure that the intended meaning is expressed precisely					
d. The ability to re-examine or process again a message, during decoding, either within the context of the communication event or after the event has passed.					

9. General Questions

1. Study program at Tilburg (MBA, MSc, BA, others) _____
2. Year of graduation _____
3. What is your age?
    a. 60 and over
    b. 45-59
    c. 32-44
    d. Under 32

4. Gender (Male / Female)
5. The sector in which your organization operates (Public / Private / NGO)
6. Your role in the organization _____
7. Select the division of the organization that you work in:
    a. Finance
    b. Human Resources
    c. Marketing
    d. Communications
    e. Sales
    f. Production
    g. Foreign Trade
    h. Other _____
8. The industry in which your organisation operates (E.g. agriculture, mining, health, education) _____
9. Where do you currently live? (City and country) _____
10. What is your nationality? _____
11. Marital status (Single / Married / Widowed / Divorced / Other _____)
12. If your answer to question 11 was married, what is your partner's nationality? _____

Thank you very much for your time

Appendix P: Cultural Group Analysis according to Hofstede's Scores

Three different cultural groups with highly different Hofstede's scores are analyzed from the sample:

Cultural Group	PWD Index/Rank	Individualism Index/Rank	Masculinity Index/Rank	UA Index/Rank
Peruvians	64 / (21-23)	16 / (45)	42 / (37-38)	87/ (9)
USA	40 / 38	91 / 1	62 / 15	46 /43
Germans	35 / (42-44)	67 /15	66 / (9-10)	65 /29
French	68 / (15- 16)	71 /(10-11)	43 /(35-36)	86 (15-16)
Dutch	38 / 40	80 / (4-5)	14 / (51)	53/ 35

Rank Numbers:
1 Highest
53 Lowest

Note. This table is a personal compilation.

Appendix Q: Highlights from Virtual Team triple chat .Class Assignment activity Peru- USA – Taiwan

This asynchrony activity was part of a virtual team assignment in class between University of East Carolina, in USA , Fu Jen University in Taiwan and Esan University, students were requested to meet from their locations using the platform WEB CENTRA, the host of the platform meeting was East Carolina University. The goal of the discussion was exchange ideas about the meaning of "Culture and Technology".

Event Name:	**ECU-ESAN-FJU A (SHL865362)**
Start Time:	**3/28/13 3:45 pm**
File Saved by:	**Mariella Olivos – Instructor**
Date Time:	**Tue April 9, 2013 8:36:15 pm**

Instructor: Mariella Olivos
Located and connected at the time of the chat Class in Chicago, Illinois. USA

Table Q1.

Pseudonyms	Gender	Nationality	Class Location
Tim	M	Dutch	Peru
Mariana	F	Peruvian	Peru
Zhao	M	Taiwan	Taiwan
Camille	F	France	Taiwan
Ryan	M	American	USA
Liang	F	Taiwan	Taiwan

Camille: Hello, anybody is here??
Zhao: I'm in
Tim to All Presenters: I can hear you but there are some sound problems still
Camille: I think we can start to talk about the topic, culture and technology
Ryan: Hey guys how are you doing today
Ryan: Agreed
Zhao to All Presenters: Agreed
Zhao to All Presenters: How to start it?
Tim: Yes, let's do this
Tim: Are there any others still waiting to join?
Ryan: No I don't believe so
Ryan: My partner here Katie isn't here today
Ryan: So we're good to begin

Camille: First, we have to define the sub-theme.
Ryan: What's the sub theme?
Maria: Hello?
Ryan: Hello
Mariana: Hello
Mariana: So I think we are ready to define the sub-theme
Zhao to All Presenters: Do u have any ideas?
Camille: Culture and technology is a big subject, we have to decide to the way of analysing the topic, such as: Can technology make easier the share of culture? Something like that
Ryan: Any thoughts or ideas?
Zhao: That sounds great
Tim: *If everybody pitches what comes to their minds we have something to choose from. My idea: Technology lowered cultural barriers through globalization, but does/did it also make the retention of own culture (through information access, storage, etc.) easier?*
Mariella Olivos: Hi students .. I've just fixed the internet problems here.. please keep going with your discussion for the sub theme ....
Camille: *What do u mean by the retention of our own culture??*
Tim: *For example that people have more access to information about the history of their own cultures and the history of their countries, so reading information and seeing videos or pictures could make them have a stronger sense of connection to their culture*
Liang: I think technology helps us to organize the data
Mariana: As Tim says, it is easier to get to know another culture with the use of internet
Maria: It is a very useful tool. Videos give us information about customs, traditions, places...We won't get everything exactly but we can have a very strong idea
Mariana: *What opinions do you have? Do you think internet helps us to low cultural barriers?*
Camille: *On the other hand, all the information can create a confusion.. with internet we can never know which information is true or not*
Liang: And with those ideas we can go deeper into the culture
Tim: Very interesting
Liang: Maybe it is the way to see the information right or wrong helps us to know more
Ryan: Sorry guys I've been typing all the thoughts and ideas y'all have had because im the note taker so i won't be talking much haha. But i see where everyone is going with this. So with the use of technology it's allowing us to learn and explore other countries' culture and history, other than the one we ourselves live in. Maybe we could do the pros and cons of technology and its form of cultural learning?
Camille: It seems to be good
Zhao: Technology change the way of culture learning
Mariana: I think one of the negative
Mariana: …aspects
Maria: …is that not everyone has the facilities to use this kind of tool, meaning internet
Zhao: Yes it's true
Mariana: *And as one of you guys said we have to be very careful with the information we find*
Ryan: Yea haha, I already started it I'm sorry
Ryan: If you have already started you can keep going though!
Tim: What did you start?
Ryan: The note taking to our conversation

Tim: Ok nice! Just to make your life easier, just copy-paste the chat afterwards?
Ryan: Haha i would but I'm typing it on my lap top and this is a different one I'm using for this chat
Ryan: In other news…
Ryan: What do y'all think our question should be?
Mariana: *Is internet the only tool we can use to lower cultural barriers?*
Tim: RQ: To what extent and in which ways has technology influenced cross-cultural understanding?
Camille: Good one
Mariana: Don't be shy :)
Liang: I think y'all have good question but how we going to do this should we compare one or...?
Zhao: Since some countries do not have the high technology
Zhao: So my question is
Mariana: What do you mean with high technology?
Zhao: Does technology narrow the cultural difference
Zhao: ?
Zhao: Like computer or smart phone
Liang: *I don't think technology narrows the cultural difference but it helps us to understand other culture I think it's two different things*
Zhao: We may miss those cultures of those countries where their technology is not that easy to get
Tim: Sure, but for this project we are supposed to focus on our own countries, which clearly have the technology needed
Liang: Okay, I see your point.
Tim: Let's talk solutions
Tim: *What can we research in this field, within our three countries, that is relevant to this issue?*
Ryan: *How about the change in culture as technology evolves in our countries*
Ryan: *And how it brings similarities*
Liang: Good
Zhao: Good
Ryan: Should we revise that?
Tim: So if I understand correctly, in other words: to what extent have people experienced globalization in their cultures due to technology?
Liang: Yes
Ryan: Yes
Camille: Yep
Liang: We could take our own country for example and compare
Ryan: Yes
Camille: I can't understand very well. What do you mean by 'experienced globalization in their culture'
Camille: ???
Zhao: Cuisine on the internet

Appendix R: Detailed Process of Creating the Perceptual Map of the figure 36

The following crosstab was created to generate the correspondence analysis.

Table R1. Frequency of use each media

	Never	1 a week	2 times a week	3 times a week	4 times a week
Frecuency use of vc	33	82	37	4	1
Frecuency use of telephone	132	13	8	3	1
Frecuency use of chat	18	36	43	23	37
Frecuency use of electronic conference	85	44	13	10	5
Frecuency use of email	27	42	37	26	25
Frecuency use of fax	155	2	0	0	0
Frecuency use of voicemail	147	6	3	1	0

Note. This table is a personal compilation (Study 2).

The correspondence analysis generates the following tables, where they observed the scores in dimension for each row and column of the table cross bite:

Scores in Dimensions

Table R2. Overview Row Points[a]

Row	Mass	Score in Dimension		Inertia	Contribution				
					Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
		1	2		1	2	1	2	Total
vc	,143	-,667	1,242	,123	,089	,635	,371	,623	,994
telephone	,143	,708	-,058	,052	,100	,001	,993	,003	,996
chat	,143	-1,118	-,750	,157	,249	,232	,812	,177	,989
electronic conference	,143	,037	,313	,008	,000	,040	,016	,574	,590
email	,143	-,931	-,396	,099	,173	,064	,899	,079	,978
fax	,143	1,043	-,208	,114	,217	,018	,980	,019	,999
voicemail	,143	,928	-,143	,089	,172	,008	,987	,011	,999
Active Total	1,000			,642	1,000	1,000			

a. Symmetrical normalization

Note. This table is a personal compilation.

From these results dimension 1 and 2 are formed. Dimension 1 reports the mediums that are more correlated among them: telephone, chat, email, fax and voicemail. Dimension 2 reports the mediums that are more correlated among them: VC and electronic conference.

Table R3. Overview Column Points[a]

Column	Mass	Score in Dimension		Inertia	Contribution				
					Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
		1	2		1	2	1	2	Total
Never	,543	,766	-,085	,229	,445	,011	,994	,006	1,000
1 a week	,205	-,717	,897	,133	,147	,475	,567	,429	,996
2 times a week	,128	-,973	,046	,090	,170	,001	,968	,001	,970
3 times a week	,061	-1,025	-,851	,066	,089	,127	,699	,233	,933
4 times a week	,063	-1,304	-1,459	,124	,149	,386	,617	,374	,992
Active Total	1,000			,642	1,000	1,000			

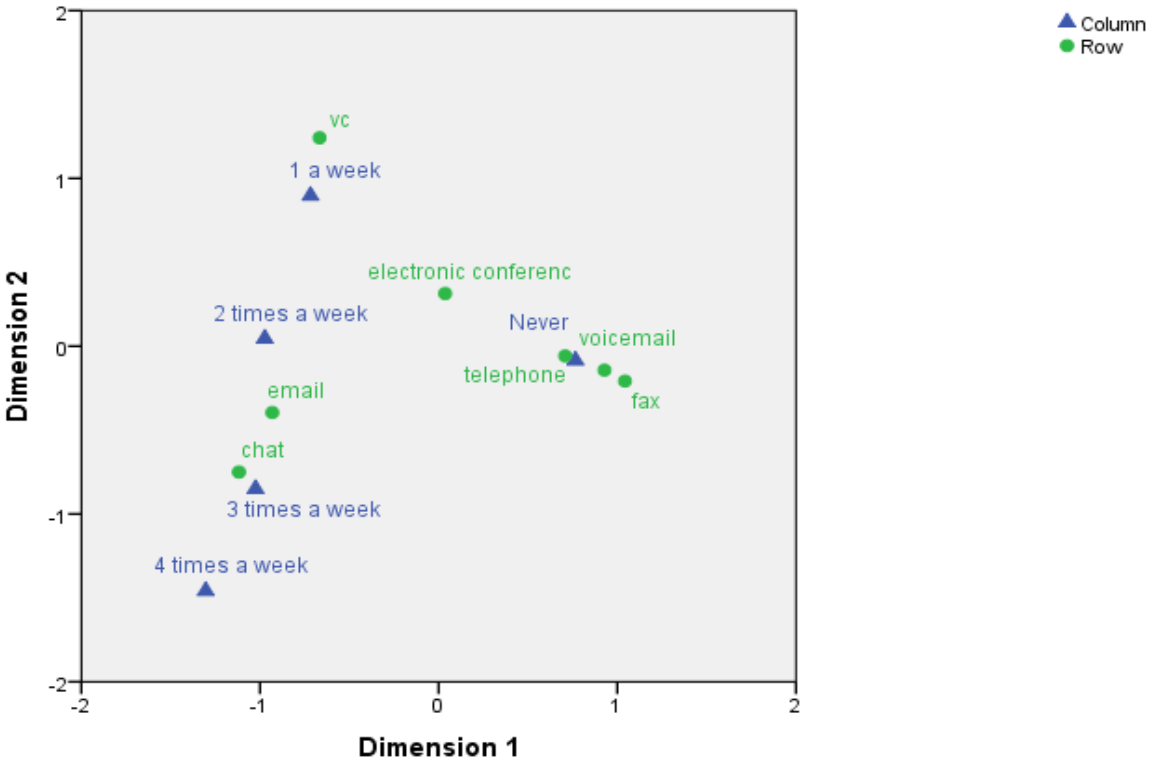
a. Symmetrical normalization

Note. This table is a personal compilation.

Here in Figure R2 we could interpret that dimension 1 is more correlated with never and 2 times a week and dimension 2 is more correlated with 1 time a week, 3 times a week and 4 times a week.

Overall dimension scores are obtained based on the proportions (mass) for each cell column and row when compared with the total sample. The scores are representative of the dimensional distances and are used for perceptual graphic.

Figure R1

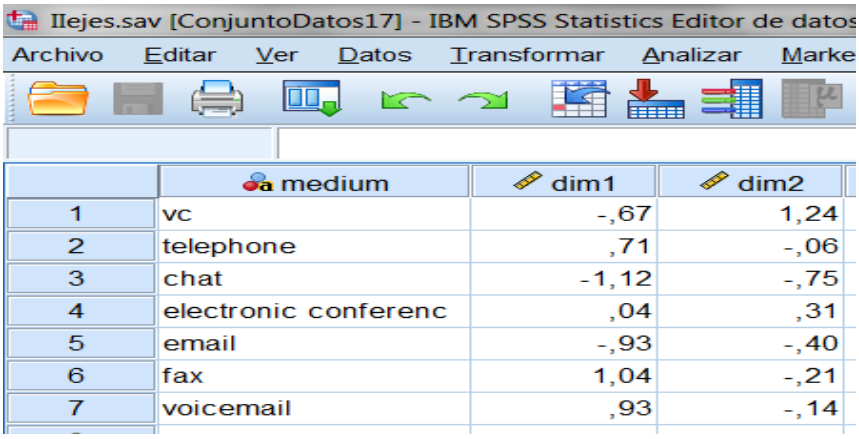

Column
Row
vc
1 a week
electronic conferenc
2 times a week
Never
voicemail
telephone
fax
email
chat
3 times a week
4 times a week
Dimension 2
Dimension 1
2
1
0
-1
-2
-2
-1
0
1
2

In the figure we see the relationships between categories and we can visually affirm which relationships are stronger, depending on the closeness of the points.

To improve the accuracy of the interpretation of the relations, we perform the second step which is to conduct a cluster analysis using the K-means algorithm which aims to form groups of records with similar characteristics within groups and different characteristics within groups.

This algorithm requires that the number of groups be noted and has the possibility to indicate the centroid for cluster formation. Therefore the row scores were used, found in the correspondence analysis (from the first step), to apply the analysis cluster: k-means.

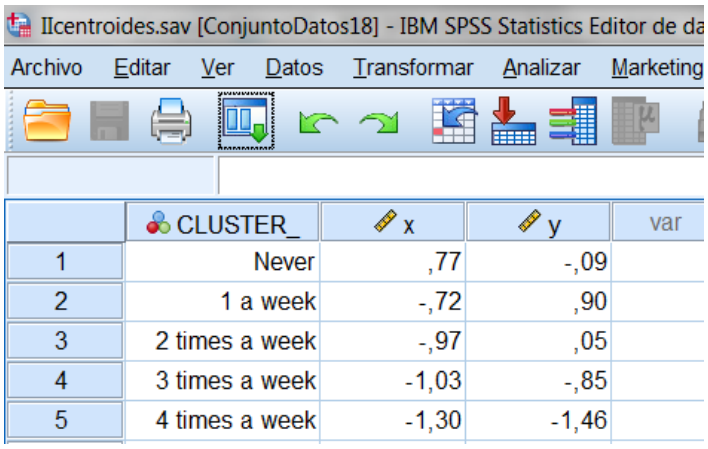
Figure R2



	medium	dim1	dim2
1	vc	-,67	1,24
2	telephone	,71	-,06
3	chat	-1,12	-,75
4	electronic conferenc	,04	,31
5	email	-,93	-,40
6	fax	1,04	-,21
7	voicemail	,93	-,14

The idea is to form five groups: never, 1 time a week, 2 times a week, 3 times a week y 4 times a week. To do this we determine that the centroid should be the column scores found in the correspondence analysis. (first step).

Figure R3



	CLUSTER_	x	y	var
1	Never	,77	-,09	
2	1 a week	-,72	,90	
3	2 times a week	-,97	,05	
4	3 times a week	-1,03	-,85	
5	4 times a week	-1,30	-1,46	

The idea of doing a perceptual map in Figure 36 is to focus on what is inside the graphic. This figure is the answer to the question used in the survey for study 2: At which frequency did you use the following media with your team-mate?

Appendix S: Detailed Process of Creating the Perceptual Map of the figure 37

The analysis was performed following two steps as in the previous for frequency of use: the first step was to conduct the Simple Correspondence Analysis of the relationship between the categories of two qualitative variables, and observe this relationship on a graph called "perceptual map." The following crosstab was created to generate the correspondence analysis.

Table S1

Overview Row Points[a]

Row	Mass	Score in Dimension		Inertia	Contribution				
					Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
		1	2		1	2	1	2	Total
speed to deliver a message	,250	-1,086	,159	,127	,691	,049	,993	,007	1,000
to transmit physical, visual and verbal symbols	,250	,659	,482	,054	,255	,446	,858	,140	,998
to craft a message befor transmission to ensure meaning of message	,250	,190	-,150	,006	,021	,043	,611	,116	,727
to process again a message during decoding	,250	,237	-,491	,014	,033	,462	,413	,542	,956
Active Total	1,000			,201	1,000	1,000			

a. Symmetrical normalization

Note. This table is a personal compilation.

The results of the analysis permit us define: Dimension 1, as VC is more correlated to the capability of speed to deliver a message and in Dimension 2, VC as correlated to the capability to transmit physical, visual and verbal symbols.

Table S2

Overview Column Points[a]

Column	Mass	Score in Dimension 1	Score in Dimension 2	Inertia	Contribution: Of Point to Inertia of Dimension 1	Contribution: Of Point to Inertia of Dimension 2	Contribution: Of Dimension to Inertia of Point 1	Contribution: Of Dimension to Inertia of Point 2	Contribution: Of Dimension to Inertia of Point Total
High	,185	-1,110	,446	,102	,533	,282	,953	,047	1,000
Medium High	,498	-,082	-,353	,010	,008	,477	,151	,845	,996
Low Medium	,256	,717	,244	,059	,309	,117	,953	,034	,986
Low	,061	1,027	,516	,031	,150	,124	,878	,068	,946
Active Total	1,000			,201	1,000	1,000			

a. Symmetrical normalization

Note. This table is a personal compilation.

Corresponding interpretation from the table report: Dimension 1 VC is High correlated with capability of speed to deliver a message and in Dimension 2 is Medium high for the capability to transmit physical, visual and verbal symbols.

Notes:

Universidad ESAN was founded as a Graduate School of Business during the sixties and was established under an agreement between the governments of Peru and USA. The academic organization was entrusted to the Graduate School of Business of Stanford University, and currently offers graduate and undergraduate programs. Nowadays ESAN's student body at undergraduate level consists of about 4,500 students divided in three schools: the School of Economics and Management, the School of Engineering and the School of Law and Social Sciences. As part of its mission, the university is devoted to educating responsible leaders and professionals able to respond to the demands of a global environment, and preparing them to contribute to the economic development of Peru. The country has experienced a positive economic growth during the last ten years (11.7% on average according to data of the Ministry of Economy and Finances (MEF) and the Central Reserve Bank of Peru). In addition, a major newspaper in Peru posted *(Diario El Comercio, Revista Orientación Vocacional October 12th, 2013 Lima Perú*) recently posted that since 2009, ESAN Universidad has been successfully using videoconference to internationalize the classroom and reported the experience of the students in the field of economics and business who were interacting with students in different universities in Asia, Europe and North America. The utilization of this methodology is benefitting them to build their intercultural skills so they can enter the labor market, a critical requirement considering that international trade in Peru has played an essential part in its positive trend of economic activity during the last thirteen years (export of commodities, mainly minerals and non-traditional).

Founded in 1927, Tilburg University comprises six schools and 13,000 students of which 10% are international. It is a fully accredited research university specializing in the fields of social sciences and humanities. Tilburg University has always actively promoted ways to firmly embed education and research in society. Its motto "Understanding Society" is based on the Christian and humanist traditions and emphasizes the university's basic principles of sustainability and diversity in the context of corporate social responsibility. It ranks third in Europe for business research. In addition, Tilburg University has been involved in virtual collaboration in education with universities in China (e.g., Hong Kong and Beijing), France, and the United States (Rutkowski, Vogel, van Genuchten, & Saunders, 2008). In 2004, one of these projects called HKNet (Rutkowski) won the Philips Prize for Innovation in Education, and later it was awarded a similar academic prize by the Association of Information Systems. Tilburg University has been investigating new emerging technology such as virtual worlds (e.g., Second Life) using them to foster virtual team collaboration (De Nobrega & Rutkowski, 2012).